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ABSTRACT

This document presents a report and recommendations of the conference on institutions of higher education as a resource in the solution of national problems. The report presents a summary for the discussions and deliberations of the conference with regard to 4 specific issues: (1) the university as a public resource; (2) internal organization of the university so that it may function as a resource in the solution of public problems; (3) external mechanisms and approaches for effective access to and utilization of the university for public problem solving; and (4) institutional and governmental policies and support necessary for the university to function in a public service role. Six of the papers that were prepared as a basis for conference discussions are also included. These are: (1) Higher Education and National Problem-Solving; (2) Higher Education: Modification Toward Changing Needs and Concerns of Society; (3) The University Interface with Societal Problems: Consequences and Prospect; (4) The University and Approaches to Problems of State and Local Government; (5) Specific Strategies and Mechanisms for University/Industry Interface; and (6) Internal Organization of the University for the Solution of Public Problems. (Author/HS)

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A QUESTION OF PARTNERSHIP

Institutions of Higher Education
As A Resource in the Solution
of National Problems

Report and Recommendations of the
Conference on Institutions of
Higher Education As A Resource In
The Solution of National Problems

Washington, D.C.—May 8, 9, 10, 1972

SPONSORED BY
The National Association
of State Universities and
Land-Grant Colleges

WITH THE SUPPORT OF
The National Science
Foundation

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U.S. DEPARTMENT OF HEALTH,
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CONFERENCE RESOLUTION

Institutions of higher education having resources and capabilities, both social and technological and which are potentially and actively of value in the solution of national problems, have a responsibility to serve the public welfare beyond on-campus teaching and research. To enable these resources and capabilities to be more effectively utilized, institutions must relate productively to external groups and agency organizations and associations to provide service. To this end, institutions of higher education, their organizations and associations must develop effective leadership and procedures for themselves as well as establish effective liaison with external groups and agencies. The National Association of State Universities and Land-Grant Colleges is urged to take the initiative in organizing this effort.

Unanimously endorsed by the Conference on Institutions of Higher Education As A Resource In The Solution Of National Problems

May 10, 1972
Washington, D.C.

PREFACE

This Conference Report represents a departure from traditional Conference Proceedings. It presents in summary form the discussions and deliberations of the Conference with regard to four specific issues:

1. The university as a public resource—definitions and scope
2. Internal organization of the university so that it may function as a resource in the solution of public problems
3. External mechanisms and approaches for effective access to and utilization of the university for public problem solving
4. Institutional and governmental policies and support necessary for the university to function in a public service role.

Six of the papers which were prepared as a basis for Conference discussions are also included.

This report was conceived as outlining the major elements within each objective which must be faced if institutions of higher education are to be able to participate effectively in responding to the non-campus needs and problems of society.

Throughout this project there was a continuing discussion over whether the report should be limited to stating themes for the future or present detailed models and programs. It was agreed that the report could be only advisory—a beginning, a basis for consideration and deliberation within institutions and outside. What degree of elaboration would stimulate meaningful discussion and debate without invading the prerogative of those who have the responsibility and authority to act was a major issue raised by the Conference. It is hoped that the level of specificity chosen is appropriate to provoke constructive discussion on and off the campuses without encroaching upon the role and competence of any relevant group or body.

The twenty-five member National Advisory Committee to the Conference was actively involved in the development and operation of the Conference. The responsibility for this report of the Conference conclusions and summaries, however, is that of the staff.

Robert N. Faiman
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October, 1972

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INTRODUCTION—

GENESIS OF THE CONFERENCE

America's institutions of higher education have made extraordinary contributions to our national life. Their scholarship has been admired throughout the world. Their research has been at the heart of world technological development. They have offered millions a path toward upward mobility and have enabled men and women to learn and continue to grow throughout their lives.

Institutions of higher education have responded to the needs of our society through scholarship and research.

The nation's universities and colleges have responded to the needs of the rich and poor, the professional, the businessman, the farmer and the industrial worker and have educated their children. When there was need to develop new scientific, professional or business responses to fuel the American economy, or insure national survival, our institutions of higher education were there.

Public service has not been neglected.

Institutions of higher education of all kinds, particularly state and land-grant universities, have a long history of public service—the making available of instruction and problem-solving support and assistance to individuals, public agencies, governmental units, and industry—outside of on-campus instruction and research activities. Federal, state and local governments, private foundations, and industry have recognized these institutional interests and capabilities and through formal programs such as USOE Title I-Higher Education Act, the State Technical Services Act, and the Cooperative Extension Service at the federal level; through many other formal and informal funding arrangements at the state and local government levels; and through supplementation by foundation and industry monies. Federal, state and local agencies have called upon institutions to assist in the operation of programs of national import ranging from basic physical and social science research to the broad service programs of such agencies as the Law Enforcement Assistance Administration, Office of Economic Opportunity, Office of Education, Agency for International Development, Veterans Administration, the Departments of Interior, Commerce, Labor, Agriculture, and many others.

Demands on our institutions are broader than ever before.

But times are changing and ever-increasing demands are being placed on all educational institutions. In the past the needs of the nation were relatively simple and clear-cut; the delineation of needs is far more difficult now, the pace of change far more swift; the range of demands much broader. In the next half century new stresses in terms of population pressures, economic growth, technical changes, and manpower requirements will be placed upon the nation's institutions of higher education.

While the resources of colleges and universities have been recognized and utilized, most efforts have been on the basis of short-term, ad hoc and categorical projects, lacking continuity of effort and support either by the institution or by those looking to it for problem-solving assistance.

A recognition of the resources in our institutions forces the re-evaluation of the role of colleges in public service.

A recognition that the resources now assembled in institutions of higher education exist as a result of broad public support over a long period of time, leads to a conclusion that such instititions have a responsibility to establish more effectively, and on a continuing basis, a working partnership with the world outside the formal campus.

A hard look at the needs and abilities of all parties involved, and development of definitive action guidelines for the nation's colleges and universities as public service resources must be undertaken. Confusion and apprehension can be found at all levels of government and in education in approaching the broad spectrum of national problems.

Broad questions must be answered if institutions are to effectively respond.

Individuals, institutions, associations, and agencies of all types and interests have discussed the problems and considered solutions over a long period of time. These efforts have been focused largely on several broad questions:

—What are the necessary and desirable changes in the content of what institutions seek in their research and teach through their faculties?

—How can we find a new balance between the reliable acquisition of knowledge and its humane use?

—How should the total response of higher education be shared among public and private institutions; how can these diverse institutions at all levels learn better to work together for common purposes?

—How can private and public colleges and universities better serve their states and the nation in making their resources available to respond to our collective public needs?

A national conference whose goal was to clarify university public service roles and responses resulted.

The cumulative result of numerous discussions of these questions, often with disparate conclusions, led to a National Conference with a broadly-based participation ranging from individual client to support agency, from community college to graduate university, from faculty member to president, and from town manager to governor to federal officials. A clarification of issues and recommendations which would form a basis for more effective action was the goal.

Points of view represented at the Conference ranged from conviction that the institution is worthless for public service purposes, or should not get "involved", to enthusiastic support for the view that colleges and universities can make a major and effective contribution through puolic service programs.

The National Association of State Universities and Land-Grant Colleges, with the support of the National Science Foundation, organized the Conference under the guidance of a broadly-based Advisory Committee.

This report is a summary of the Conference discussions.

Part I
Summary and Conclusions

I. Institutions of Higher Education as a Public Resource—Definitions and Scope
II. Internal Organization of the University for the Solution of Public Problems
III. External Mechanisms and Approaches for Effective Access to and Utilization of the University for Public Problem Solving
IV. Institutional and Governmental Policies and Support Necessary for the University to Function in a Public Service Role

Recommendations

I. INSTITUTIONS OF HIGHER EDUCATION AS A PUBLIC RESOURCE—DEFINITIONS AND SCOPE

The university's responsibility is changing from that of primary emphasis on instruction and research within the traditional "campus" community, to one of broadened responsibility for bringing the unique resources of the university to bear on major problems of the society which supports it. New concepts of institutions of higher learning are evolving. There are both positive and negative reactions to these concepts, and dissident voices which must be answered. Archaic tax structures, student dissent, and the inability of adults to understand the institutions of the present generation all point to a crisis within the university system. A solution to the disparity between institutions of higher learning and their environments—the essence of this crisis—can be found in outreach—the institution serving beyond the campus. Outreach may be divided into two components: educational activity and service activity, the latter being divided into two more segments, problem-solving and program development and management. Within this approach a new dimension may be added to higher education.

New concepts—a dichotomy.

New concepts of institutions of higher education are evolving. There is, for example, society's present attitude toward the university. On the positive side, the university has never been more in the public or private consciousness. It has never received more attention. Its scholars and scientists have never been more sought after, more rewarded, more honored. Its students have never been more numerous, or generally speaking, more able. Its buildings and other facilities have never been more splendid.

Institutions of higher education have been honored and supported.

But hostile reactions to institutions of higher learning have also grown.

But, there are dissident voices also, and those voices are strong. Many reasons are advanced for a growing tide of hostility against institutions of higher education. Taxpayer rebellions are springing up across the country against archaic tax structures, from which the largest percentage of funds goes to education and defense. Student dissent and even open revolt against "the establishment" have led many to fault higher education for failing to teach the proper moral values, respect for law and order, and perpetuation of the democratic heritage. Many schools and universities of today do not resemble those attended by adults; they appear too lax, too progressive, too free, with neither direction nor discipline Some critics maintain that higher education is on the verge of, or in, a "crisis".

The crisis is a disparity between the institutions and their environments.

This crisis is more subtle and less graphic than a "food crisis" or a "military crisis", but no less dangerous. Its nature is suggested by the words "change", "innovation", "adaptation", "response", "delivery", and "relevance". The consequent conflict—taking many forms—between institutions of higher education and their environments seems to be the essence of the crisis.

Four causes for the disparity are:

There are specific causes for his disparity: four in particular stand out.

1) Rapid growth within institutions

First is the sharp increase in popular aspirations for education resulting in institutional growth.

2) Scarcity of resources

Second is the acute scarcity of resources which has constrained institutions from responding more fully to new demands.

3) Institutional inertia

Third is the inherent inertia in higher education systems, which has caused them to respond sluggishly in adapting their internal affairs to new external necessities, even when the resources have not been the main obstacle to adaptation.

4) Traditional attitudes of society

Fourth is societal inertia—the heavy weight of traditional attitudes, religious customs, prestige and incentive patterns, and institutional structures—which may block the optimum use of education and educated manpower to foster national development.

New expectations are emerging.

In addition to the classic concern for acquiring a degree, other specific expectations from higher education are emerging. The increase of leisure time, the rapid acceleration of obsolescence of much training in professional careers, technical aid to small industry, policy studies for state governments, the effects of automation, environmental studies, expertise in shaping economic policies, and reconsideration of the place of women in our society to list only a few, combine to give new importance to education of many sorts. The public expects and demands colleges and universities to provide expertise and assistance in the solution of such problems.

Institutions must respond to these expectations by bringing themselves to the people.

Response to these cannot be the responsibility of one professor, one dean, a college within the system or a single campus. Institutions of higher education can no longer exist in isolation or exclusively as places where people go to "get an education"—they must bring themselves to the people.

The role of the university as a public servant is a realistic one.

Yet there is abroad in the academic land an impression that service as an area of university endeavor has gone the way of horse-age farming and the "cow-college"—on the way out and that colleges and universities should be concerned only with sophisticated intellectual pursuits. However, as Eldon L. Johnson so accurately describes:

There is something about this impression—or perhaps it is a hope—which fails to measure up when put to the test. Every speech on the university's role belies it. Every university catalog professes otherwise. Every university statement at legislative hearings denies it. Quite the contrary, those who keep struggling to state and restate the goals

of higher education also keep struggling to reassert and revitalize and extend the service role . . . . Far from going the way of the 'how-to-farm' college, the service role is finding rigorous new declarations of purpose and faith even from spokesmen for the private colleges and universities. If cynicism says this is an accurate response to potential federal support, the point is only reaffirmed—the public will be heard and its demands for service will be heeded, if not by one intellectual source then by another.

In short, any institution supported by society has to be realistic enough to know and understand the expectations and needs of that society which it purports to serve. Internally, therefore, each institution must itself decide in this context on what to do.

Public universities are obligated to all who support them.

A public university, especially, has an obligation to *all* citizens who support it, to say nothing of its obligation to such public and private groups as governments, schools, hospitals, and business.

Service, extension—OUTREACH

There is however, a critical problem of definition. "Service" is as ambiguous and inconclusive a term as is the traditional "extension". Neither lends itself to a brisk definition. Yet, each is a term heard increasingly in the deliberations of educators and community leaders who are concerned about the directions institutions of higher education are taking. What is being discussed is something other than the "regular" on-campus teaching and research functions through which institutions of higher education meet and serve their publics—*outreach.*

Outreach—education and service.

An approach to institutional outreach requires an understanding of the nature of this function and an identification of its parts. While there will be overlap, outreach may be divided into two relatively discrete components. These are:

A. *EDUCATIONAL ACTIVITY*

This includes all varieties of formal instruction to non-regular students, including credit and non-credit work offered through a range from regular-length courses, short courses, seminars and special training sessions to small group or individual learning experiences.

B. *SERVICE ACTIVITY*

(1) *Problem Solving* (consulting, advising, technical or professional assistance). This is an institutionally organized effort involving individuals, groups, academic departments or special centers, units or consortiums created for this specific purpose. (Consulting by faculty acting as private individuals is not included in this.) Under this category activities may range from discrete specific questions to which an immediate answer may be given (over-simplified, one example would be the size of a bolt in a roof truss) to the study of a broad problem which results in data, information or recommendations from which a client group must in turn make decisions (such as various taxation methods for state governments).

(2) *Program Development and Management.* Institutions of higher education may also be involved in the establishment and/or operation of special projects or programs using staff or faculty expertise to carry efforts which are of value to segments of the governmental, public or private sector. In this category are USOE Title I-Higher Education Act, Upward Bound Projects, The University Year for Action Program, Head Start, State Technical Services, etc. Again, this may be done through individuals, regular academic or administrative departments, centers or ad hoc groups. These activities considered under this heading may be developed in response to a formal external program or as the result of recognition of need by an on-campus group.

Outreach provides society with talents and resources of the institution in response to its support.

The concept of outreach that is presented here does not diminish either other university functions or the role of such outside groups as corporations, foundations, churches or governments. But, it suggests that because institutions of higher education have a high concentration of specialized talent and intellectual power, the public is justified in demanding that higher education contribute in proportion to its special ability.

If it is agreed that institutional knowledge can be brought to the solution of significant national problems through *outreach*, then a neglected dimension of higher education is brought forward for new emphasis.

II. INTERNAL ORGANIZATION OF THE UNIVERSITY FOR THE SOLUTION OF PUBLIC PROBLEMS

To fulfill its outreach function institutions of higher education must be coordinated internally: a philosophy of "shared partnership" must be established internally as well as externally. Internal coordination is needed to aid outsiders who are unsure of how to utilize the resources available. A university must be aware of the risks involved in public service, but not recoil from them. It must, also, be aware of when it has or does not have resources adequate to respond to a request, and act accordingly.

Internal institutional cooperation and coordination are required for maximum effectiveness.

Public trust depends not just on an informed sense of the university's potential, but also on satisfaction received; and the latter depends on how the university responds—a response based on a coordinated effort to serve.

The activities associated with the outreach function necessitate a philosophy of "shared partnership" on many different levels. It requires that administrators and professors alike not view the university as an island of knowledge surrounded by a sea of ignorance but, rather, as a reservoir of competencies capable of wide diffusion. A "shared partnership" philosophy requires colleges, schools, departments and individual professionals within the university to abandon the idea that they function in isolation. For effective public service, they must combine their resources in cooperative and interdisciplinary efforts.

Many institutions of higher education have stated their commitment to the service concept. Significant contributions have been made to public and private groups by individuals, departments and specialized service agencies. However, in too many instances the university as a whole has responded inadequately. Responses have been slow, sporadic, unorganized; only a few efforts have been made to organize a response mechanism to coordinate the university's outreach services.

Fragmented efforts are not sufficient.

On many campuses, centers, bureaus and institutes, spawned from various academic divisions, exist as isolated organizations. They struggle, often against overwhelming odds, to launch university-wide projects requiring interdisciplinary cooperation, and in many instances compete with each other for limited resources within and without the university.

Existing university functions and activities limit resources for change.

One factor partly responsible for the slow pace at which the university adopts new practices and changes, is the inadequacy of institutional energy or resources to devote to the "change process". The institutional struggle to maintain the needs of the organization as it exists, leaves little for innovation.

Outreach must be co-equal with all other institutional functions.

Effective outreach requires a nucleus of faculty members dedicated to public service, competent in their areas and adept in offering the user something which he sees as related to his problem. Outreach must have perceived professional significance to the institution and its staff. It must supply feedback. It must be tied in with instructional and re-

search programs. Those participating must be accepted as equals in the prestige and rewards system of the university. This includes appropriate criteria for promotion, representation on policy-making bodies and other opportunities for equal recognition. Above all else, there must be strong administrative backing for the public service effort. *In all respects, it must be recognized, supported and administered co-equally with the other major university functions.*

Universities should operate where competence and resources exist—but this must not be an excuse for no action.

As a starting point, the best internal approach for institutions of higher education is to deal with problems in which the goals are fairly clear, competence and knowledge are assured, and little controversy exists—in short, projects in which the prospects for success are relatively high. This is not to suggest neglect of other areas. The object is to build confidence and develop supportive relationships. Care should also be taken to approach problems in the context in which the solutions are going to have to be implemented. That means full planning participation by the users, or objects of the service, and the establishment of mutual confidence among the cooperating partners.

Instititions of higher education must also be clearly aware of the risks involved in the public service role. There will be risks and they must in many cases be taken; knowing them is part of the decision. A university's concern is with knowledge and its uses, not with power and its use.

Contact mechanism is required to coordinate resources and work with outside users.

There is also a need for linkage arrangements or recognized internal contact points for those who want to use the resources of the university and are uncertain where to go. This may be as minimal as a referral office, someone who can take the communication and turn it over to the best source of help, or as highly developed as a field service system such as at the University of Missouri or the University of Tennessee.*

Finally, saying no to requests when the institution does not have the competence or the resources is as important as saying yes if the work can be effectively done.

*See Part II—*Specific Strategies and Mechanisms for University/Industry Interface* by John B. Sutherland and *Internal Organization of the University for the Solution of Public Problems* by A. B. Biscoe.

III. EXTERNAL MECHANISMS AND APPROACHES FOR EFFECTIVE ACCESS TO AND UTILIZATION OF THE UNIVERSITY FOR PUBLIC PROBLEM SOLVING

A partnership involves the mutually beneficial relationship of equals. As universities must organize a focus to their knowledge for the benefit of external users, so must users, including governmental units, organize and define their problems and establish interface mechanisms to work with universities. Universities deal in knowledge, agencies in action. Both external unit and university structures must assure that these roles are understood and maintained. Problem definition and project requirements are an agency responsibility. They must be clearly defined and of manageable proportions. Universities must not accept responsibility for doing for others what others should do for themselves. Universities must also recognize that they are only one resource in support of external units: likewise, external units must utilize other private and public sources of expertise.

External agencies must also organize to interface with institutions.

A partnership requires at least two parties, each of which will benefit from the relationship. Each must be sure of both his special capability and his need for the other. Each should be able to communicate effectively with and to contribute a fair share toward a shared goal. As universities have strengths and abilities which must be organized and structured for public service, governmental units and private groups must also have organizational structures which can communicate with universities. As university structures must be able to communicate internally, the external agency must be able to identify its needs and be able to define these and translate them to the university.

University and external unit must each be clearly aware of role and responsibility.

While the university may assist in external unit problem definition, only the unit itself can decide what its problems are and establish its requirements. *Universities deal in knowledge—agencies deal in problems and are charged with their resolution.* Agencies, no less than universities, have internal problems in establishing structures and procedures which can bring to definition specific problems for the application of university expertise. An agency must avoid being co-opted; it has a responsibility and necessity to act. When "the chips are down" only the agency faces the consequences of its decisions and actions. Partnership parties must be clearly aware of this and act accordingly.

Problems must be clearly defined and broken into manageable components.

Agencies should define their problems in clear and manageable terms. It is easy to be loose and broad; difficult to be concise and limited. The value of advice and assistance for the user is in direct proportion to the sharpness of applicability to the problem at issue. Unless the mechanism provides inputs which can maximize the defined user interests, its value may be minimal or non-existent. Problems need to be broken down into definable components related to the user's specific need; university responses must be in terms of such components. And if for any reason in the agency's operational judgment (political, fiscal, etc.) the outside assistance is deemed inappropriate for implementation, the university must understand and accept.

University must not do the user's work.

As universities may be tempted to assume omnipotence in recommending ideal solutions, agencies may ask for counsel on problems which are highly controversial and for answers which only the agency itself can give. Universities may properly indicate the probable consequences of alternative policies. They should not be asked to accept, nor can they accept, responsibility for making or recommending decisions which clearly are the function of the agency requesting assistance.

Universities are only one resource.

Agencies must also utilize other existing sources of assistance. Governmental and private agencies of many kinds exist, and if they are not more relevant than university resources in particular cases, they may be essential supplements. Coordination and integration of these several sources is a responsibility of the using agency although the university may help. The university is *a* resource, not *the* resource. It is one of several and should not be assigned—or assume—sole-source capability.

IV. INSTITUTIONAL AND GOVERNMENTAL POLICIES AND SUPPORT NECESSARY FOR THE UNIVERSITY TO FUNCTION IN A PUBLIC SERVICE ROLE

Recognition of institutional capabilities for public service must be accompanied by allocation of institutional resources and external agency support. External support must recognize the need for both basic continuing programs and specific project costs. Consistent, coordinated, mutually agreed policies at federal, state and local levels are critically necessary. The costs of the solution of broad societally important problems are being allocated on a broad societal base; the costs of university components of such solutions must be included and provided.

Public service requires adequate funding.

Recognition of university capability and responsibility in a public service role also requires concurrent recognition of the need for adequate financial support for this function. Institutional allocation of resources, public support through appropriations and user purchase of services, are necessary. The institution needs support both for maintenance of capability and for delivery on particular projects.

Continuity is mandatory.

Institutional and agency processes, to be effective, must be uninterrupted. Specialized professional personnel must be supported in both. A continuing basic funding of these is a requirement. While the direct costs of particular projects are obviously necessary, the supporting or overhead costs must also be recognized and provided. Consistent external support agency policies are of critical importance; basic federal policies coordinated with state and local sources of support must recognize institutional obligations and needs. In turn, institutional procedures must recognize agency policies and limitations.

Governmental agencies must provide their share of public service costs.

Governmental agencies, in calling on universities to assist in problem-solving; and universities in responding, must be clearly aware of the consequences of drastic changes in governmental priorities. Many universities face serious fiscal and personnel problems because of past expansion of research and graduate education in areas once stressed of as high and continuing federal priority. As governmental priorities and support shifts to new areas, government must share responsibility for the problems and costs of readjustment. Universities, for their part, must limit their risk-taking in new commitments to those which can be absorbed—if necessary—without jeopardizing the overall fiscal integrity of the institution.

As societally related problem solving programs are agreed upon at the federal, state and local level, recognition of the university role (as well as that of other private and public agencies) should be built in, including adequate funding to make the necessary financial resources available. When universities are called upon to provide societally relevant specific services in formal education or research (and are assigned concurrent financial support) the basic and extraordinary costs of public service response must be recognized and provided. Federal, state and local governments must, as a basic policy, accept and provide the monies necessary to establish

and maintain their share of the institutions' costs for public service—outreach—provided.

Institutions of higher education can and will serve increasingly in a public service role. They are, however, required to be accountable for their actions and expenditures; support of their public service activities must be directly accepted and provided.

RECOMMENDATIONS

1. **THROUGH THE INITIATIVE OF THE NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES, ALL HIGHER EDUCATION ASSOCIATIONS ENDORSE AND ACT UPON THE FOLLOWING RESOLUTION:**

   Institutions of higher education having resources and capabilities, both social and technological and which are potentially and actively of value in the solution of national problems, have a responsibility to serve the public welfare beyond on-campus teaching and research. To enable these resources and capabilities to be more effectively utilized, institutions must relate productively to external groups and agency organizations and associations to provide service. To this end, institutions of higher education, their organizations and associations, must develop effective leadership and procedures for themselves as well as establish effective liaison with external groups and agencies. The National Association of State Universities and Land-Grant Colleges is urged to take the initiative in organizing this effort.

2. **THOSE PARTICIPATING IN THIS CONFERENCE AND OTHER INTERESTED GROUPS AND INDIVIDUALS, ORGANIZE REGIONAL CONFERENCES WITH A SPECIFIC FOCUS ON PRACTICAL PROBLEMS AT THE REGIONAL, STATE, AND LOCAL LEVELS. THIS REPORT MAY SERVE AS A RESOURCE FOR SUCH CONFERENCES.**

   A major hurdle to an effective outreach partnership between institutions of higher education and external groups and agencies is a lack of communication and hence of understanding of needs, capabilities and limitations on both sides.

   While the Conference ameliorated many of these difficulties for the participants, others must have similar experience. It was felt that more individuals, institutions, and agencies must be involved if a broad base of effective understanding is to be established, and if particular institutions, agencies and external units are to devise effective responses to actual needs.

3. **INSTITUTIONS OF HIGHER EDUCATION AND FEDERAL, STATE AND LOCAL AGENCIES ANALYZE THEIR**

OBJECTIVES AND NEEDS AND ESTABLISH ON-GOING STRUCTURES TO DEVELOP AND MAINTAIN EFFECTIVE PARTNERSHIP RELATIONS.

Institutions must establish special administrative and academic structures and procedures for outreach and public service comparable to those for resident instruction and research. Institutional priorities and interests are pragmatically reflected in the level at which it is administered. Institutions have formal councils, deans, provosts, and vice presidents for instruction and research; public service and outreach must be recognized by similar co-equal organizational structures.

Governmental units and agencies—federal, state, and local—must also have knowledgeable administrative and program personnel and/or units which will define their problems and needs and be able to interact with educational institution counterparts.

Institutions and agencies—must devise structures for effective liaison, mutual understanding, joint planning, and action. *Linkages* are required.

4. **COSTS ASSOCIATED WITH OUTREACH EFFORTS MUST BE RECOGNIZED AND SUPPORTED.**

These costs cannot be met incidentally. Institutions must budget for outreach and public service efforts, and governmental units and agencies must be prepared to defray not only direct but supporting costs. Categorical or project grants or contracts must recognize not only direct costs of the activity but also the indirect costs of facilitation and of enhancing institutional capacity to deliver.

PART II

Conference discussions centered around a series of prepared papers. Six of these which offer additional detail and information follow. A description of a working institutional organization for public service and outreach is also included.

A FOCUS ON THE ISSUES

"Higher Education and National Problem-Solving"
by Eldon L. Johnson

"Higher Education: Modification Toward Changing Needs and Concerns of Society"
by Virginia B. Smith

"The University Interface With Societal Problems: Consequences and Prospects"
by Frederick P. Thieme

"The University and Approaches to Problems of State and Local Government"
by Robert Nathans

"Specific Strategies and Mechanisms for University/Industry Interface"
by John B. Sutherland

"Internal Organization of the University for the Solution of Public Problems"
by A. B. Biscoe, Jr.

"User Agency Policies and Mechanisms for Utilizing the Resources of Institutions of Higher Education"
by Robert C. Wood

HIGHER EDUCATION AND NATIONAL PROBLEM-SOLVING

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The campus has resources. The nation obviously has problems. Whether and how they are matched is the question.

The debate is not about the components but about their relationship. The resources of the greatest campuses are overawing—libraries, laboratories, museums, specialists, computers, experience (both firsthand and historical), skilled manpower in the student pipeline, knowledge-in-the-making, the arts of scholarship, and superbly trained faculty intelligence. Outside this enclave of scholars, in what is called "the real world," society is teeming with uncatalogable problems of people, machines, and environment in every conceivable mix, mesh, and mismatch. They are the results of applied and misapplied knowledge and will respond only to knowledge applied in some other way. Between university knowledge and national problems, what should the relationship become?

The theme of this essay will be:

1. The nature of our world is forging a closer university relation to problem-solving; therefore, the debate about "whether" is an anachronism.
2. While the relationship is knowledge-based, it now calls for something more direct than teaching the next generation and searching for what is now unknown: it calls for direct service in the alleviation of human problems and, because so widely misunderstood, a restatement of the rationale.
3. Difficult and even threatening problems arise in the relationship; but meeting and ameliorating, rather than longer evading, them is the urgent task ahead—the task not of whether but of how.

Any analysis of the proper interface between higher education and national problems should begin with an awareness of the need for reduction to some kind of manageability, even if by arbitrary means. Look at the components. On the educational side we find institutions arrayed from community colleges to graduate schools, then the teaching-research-service triad, then both classroom teaching and non-traditional learning, then research ranging from basic to developmental, then disciplines as different as philosophy and dentistry, then an organizational spread from multicollege institutes to individual professors with personal preferences. All these have potential interfaces with literally *all* the problems of the nation, which in turn involves the intermediation of other social institutions—particularly the national government, but also other governments, the great corporations, and a host of voluntary associations. And, finally, the problems themselves range from the permanent to the soluble (from what it takes for global survival to what is best for filling potholes in the streets), with particular problems spreading from the ultimate to the immediate (from the planet as an ecosystem to the backdoor garbage can as a pollutant). It soon becomes apparent that all this must somehow be reduced to better order if there is to be a meaningful relationship between higher education and national problems. The art of selection takes on paramount importance—selection of problems, of educational components, of societal counterparts, and of appropriate linkages.

PRESENT AND EMERGING SITUATION

In appraising this relationship five years ago, the Carnegie Foundation for the Advancement of Teaching said: "public service has become a large and important activity at virtually every university, both public and private, and at many colleges as well." To appreciate *what* has become "large and important," before some delimitation, it would be well simply to look at what universities are in fact doing in a spirit of public usefulness at their many intersections with non-university life. First, with or without conscious direction, the university serves its surrounding community in myriad ways through its corporate behavior. Next, conventional teaching can be and is made into public service when it offers formal courses off-campus, informal "instruction" where the problems are, and student internships in hospital, ghetto, or government; hence we have continuing education divisions and the nationwide network of Cooperative Extension Service. Also conventional research can be and is made into public service when it is given appli-

cation; hence we have engineering and agricultural experiment stations and other use-oriented laboratories.

With much sharper focus, although often building on applied teaching and applied research, many direct university services are performed through multi-disciplinary institutes or centers concerned with urban problems, schools, labor relations, environmental control, business management, state and local government, and overseas activities. Vast university-run health complexes dispense direct patient care and preventive community health services. Universities perform institutional management of the most complex and costly type for atomic reactors, computors, and medical care. Full-fledged partnerships, sometimes even self-governing, are made with government, industry, and other educational institutions to deliver specialized kinds of public service. There are countless responses to the promptings of the federal government, which increasingly invites university cooperation through all kinds of problem-solving legislation and through a growing number of tailor-made contact points, as the Cooperative Extension Service has always been and as RANN (Research Applied to National Needs) in the National Science Foundation is becoming. These sometimes have state and city counterparts. Finally, there is the whole unmeasurable spectrum of public service given privately by university personnel acting outside their official capacities.

In other words, although not neatly coordinated, an immense amount of public service is already being conducted by universities in response to legislative requirement, governmental contracts, private and public grants, cooperative agreements, and urgent public consensus. Big organizations, thousands of specialized personnel, and money in the millions are already committed to this practical coupling between universities and society. Many state universities spend more than a tenth of their resources this way. Cooperative Extension alone amounts to almost $150 million in federal funds annually, and the states contribute almost as much in addition. The pending National Science Foundation budget proposes that an eighth of its appropriation go to RANN (Research Applied to National Needs). Three-quarters as much ($60 million) has been authorized in the Office of Education for community service and continuing education, although never as much as $10 million has actually been appropriated. The National Advisory Council on Extension and Continuing Education has recently identified 143 federal programs requiring a public service input from higher education. One must conclude that while this service function does not yet take the time and resources the university devotes to teaching and research, it, however ill-defined, is already a major university commitment. It also has a potential far from presently realized.

The world is in the process of crowding the university, sometimes over campus objections, into a closer partnership. Cries of resistance are rising again, now that campus calm and budget restraints are revealing the honestly preferred priorities, again revealed to be inward-looking. We are in a new cycle of "returning to the fundamentals," of articulating what the university can't do instead of what it can do, of wanting to be let alone, of thinking that problem-solving is sufficiently served by educating those who will inherit the problems. We are in a new cycle of quoting Alfred North Whitehead's plea for education "as high as art and as deep as philosophy" but neglecting to quote his other plea that "Celibacy does not suit a university. It must mate with action."

In the absence of sympathetic external allies for the university, the world is likely to have its way—by compulsion of circumstance, by undesirable intrusion, or by the creation of intellectual institutions off the campus. Why this drive toward a closer societal or problem linkage with the university? Faced with urgent needs, society finds that the university has both the basic knowledge and the potential translators of such knowledge. If society wants to know *why* for policy purposes and to know *how* for follow-up, it can hardly avoid the pool of talent which *is* the university.That institution is also presumed to be objective; and it can, in its relative detachment, tolerate dissent and survive error. As a leader in the great disciplines and professions, all of which have outside practitioners, the university is itself a potent system-maker or orchestrator of competencies in an age when systems and sub-systems are needed to bring order out of complexity. The university has an unbeatable "inside track" in many of the required technologies because it educates those who practice them. It is the logical helper also if the user is looking for understanding as distinguished from action—understanding which must precede action—since that is the university's universally-conceded

specialty. The university is also change-oriented or development-oriented, at least in its external relations; hence it is responsive to our own so-called developed society when it proves itself to be, like places we aid abroad, "undeveloped" wherever it encounters monumental problems. The time relationship between knowledge and payoff is now so shortened that more academic men and women want to be where the action is, to get professional feedback from live laboratories, and to influence power without wielding it. Finally, some of the campus-based professions are themselves proclaiming that the neglected essence of a profession is public service.

In other words, there are many couplings and many strong motivations for liaison between universities and social problems, or the personnel and institutions charged with responsibility for solving them. That these linkages are tightening, or ought to be, is underlined by a flood of high pronouncements and recommendations from public leaders and professional societies. In his State of the Union message, President Nixon said: "In reaching the moon, we saw what miracles American technology is capable of achieving. Now the time has come to move more deliberately toward making full use of that technology here on earth, in harnessing the wonders of science to the service of man."

In 1969, the National Academy of Sciences and the Social Science Research Council jointly reported "the need to apply the. . .full range of sciences to the problems of our society," urged universities to examine new forms for "the solution of persistent social problems," and suggested staffing with "those fully committed to intellectually rigorous, action-oriented, policy-related, problem-solving research."

In the same year, the academic science arm of the federal government filed a report significantly entitled *Knowledge into Action: Improving the Nation's Use of the Social Sciences.*

Sir Frederick Dainton, speaking last year for a working group in the British government, put aside the pure and applied labels and spoke of basic and strategic science, "especially closely linked. . .with the higher educational system," plus a third category, "tactical science—the science and its application and development needed by departments of state and by industry. . .", with "practical objectives."

Using both academic and governmental scientists, the National Academy of Sciences in 1968 reported this lament: "The capacity of bringing knowledge to bear on practical problems has been given little attention. . . The emphasis has been on teaching and original research. A major area of concern in the future. . .is the education of 'translators' or men and women who are trained in applying professional education. . ."

At a just-completed conference on universities and state government problems, sponsored by the Ford Foundation, one speaker said, "The state's need from academia is for help in solving problems. . . In responding fully to this challenge, academia would also be helping to free itself from self-generated inhibitions and self-fabricated bonds that keep it from achieving its own best potential." Two collaborators said, "there is a credibility gap between the states and the university in the public service function, and to a large extent the burden of closing the gap rests with the university."

AN OPERATIONAL PHILOSOPHY OF SERVICE

All this gives point to the earlier Carnegie conclusion: "Thus the formulation of a satisfactory philosophy of public service is a task of the greatest urgency. It is, at the same time, one of the most difficult assignments facing the American university today."

The first stumbling block to the formulation of a philosophy is the confusion about terminology and concepts. Without attempting to settle the issue generally, we can settle what is of special relevance for present purposes. We begin with traditional dogma only as a point of departure. The dubious doctrine of the equal trinity—teaching, research, and service—has held us in its grip long enough, with endless and pointless debate about preemptive priorities, one part to the exclusion of the others. The last of the triad, service, can gain only grudging acceptance when it is forced to stand on its own feet, because it is by nature dependent, instrumental, and empty of its own content. It suffers from the incomparability which is built into the model. Professor James T. Bonnen of Michigan State University, who has spent three years studying these phenomena and will eventually have a useful volume on the subject, conceives of university functions in a subtly different way. He visualizes three capacities, like three rings—as teacher, as researcher, and (note the change) as a

socially responsible organization—with the public service function lying *only* where these three rings overlap and interlock with a sharing of some aspects of all three characteristics. This matrix has the merit of showing the interdependence of the three parts, while aiding manageability by forcing some exclusions at the borders. Still another construct would conceive of the university as a center of learning, with only *two* activities: the discovery of knowledge and the delivery of knowledge. In this model, the old ideas of teaching and service become much more alike—one delivering knowledge indirectly, one directly, one to students, one to clients, perhaps institutional clients; one long-run, one immediately; one on-campus, one off-campus. One is the short arm which reaches only to students on the campus. The other is the long arm which goes outside. This concept of alternate modes of delivery challenges the inclination to put knowledge into campus protective custody and argues for more extended and more direct utilization.

This abstract dissection of the organic university process, usually leading to preemptive, exclusivist, either-or, inward-looking university goals, is the No. 1 impediment to constructing a rationale for sensible connections between university resources and national problems. Is there any escape from this rhetorical nemesis? Perhaps one—not to talk about the trilogy; in fact, not even to start on campus, but to start with the outside problem and then proceed pragmatically to what the university has to offer toward its alleviation. Don't ask the university about an abstraction. Ask it about a problem. Then will it say, "We simply teach;" or "We do only basic research?" Will it say, "We will have graduates who may help you a few years hence;" or "All we can do is to give you these basic principles for whatever use you can find?" A university loaded with relevant resources is not likely to respond that way. It has more to give, and to give directly; and it will reflexly respond to what gives point and currency to that knowledge of which it is society's trustee.

So we propose to block off the definitional escape hatch sought by those who claim that teaching *is* service and research *is* service. They *can* be, but *are* they? Seeing that they are is one of the university's special tasks—seeing that they get locked onto problems which matter to those who make universities possible. The traditional triadic analysis can help identify those core university processes which can be brought to bear on problems, but it is the *bearing* or problem focus which is relevant here. We are concerned with the applied or direct-service end of the knowledge-to-action spectrum, and concerned with the teaching and research components only as back-up resources.

The essence of a "formulation of a philosophy of public service," to revert to the Carnegie phrase, is recognition that public service is part, an integral part, of a knowledge continuum—a loop of self-regenerating capacity. The parts have organic connections and they bleed when cut. Excision of one part threatens the health of the whole university body. The university itself cannot be integrated, to say nothing of meeting its social responsibilities, without regarding the discovery, the transmission, and the application of knowledge as a replenishing cycle. Relation to the nation's problems can provide strong feedback and self-correction for effective retargeting. Director H. Guyford Stever, National Science Foundation, recently made the same point about the unitary knowledge spectrum, saying science is healthiest when basic research is strongly supported and its discoveries flow smoothly through applied research and development into the activities of society. Just as research enriches teaching, so service adds its dimension to both—the test of relevance, the antidote for overspecialization, and the freshness of immediacy.

The public service role of universities is their most misunderstood role because the critics keep trying to tear the organ from the body, as if it were a bloodless appendage. They do not understand Whitehead's comment: ". . .the *applications* are part of the knowledge. For the very meaning of the things known is wrapped up in the relationship beyond themselves. Thus, *unapplied* knowledge is knowledge shorn of its meaning" (italics supplied). It is unconscionable for the modern university, custodian of human knowledge and sanctuary of specialized experts, to act as if it has nothing to say, or to do for, those outside its walls who are working on problems of city deterioration, race relations, environmental control, economic growth, transportation overload, mid-career obsolescence, or equitable delivery of health care. Fortunately, there is ground for confidence that American professors will not emulate those Bengali intellectuals who are obivious to Calcutta. Hopefully, they will rise to

the problem-solving challenge and prove wrong the cynics who say that all large cities are destined to follow the Calcutta prototype. In the face of current national problems, simply to say universities will teach and universities will do research is to miss the energizing context which imparts life, relevance, and distinction. Here on sufferance from a society which ultimately nurtures only what it believes in and benefits from, the university is a potent instrument for intellectual service, wherever knowledge can be brought to bear on society's needs. Discovering knowledge is one way—but only one. Passing it on to learners is another—but only one. Applying it to problems is still another—and one more important than ever before. In the current vernacular, knowledge needs a "delivery system."

COUPLING PROBLEMS

How can the university provide it? That is the operational follow-up to our philosophy, once accepted. Providing the effective coupling between university and national problems is the challenge. This is not without problems itself; so we had better look at some limitations, at needed structures, at funding, and at criteria for the avoidance of politicizing the university.

While public service does not seem in any danger of running amuck in the academic community—far from it at present—we must recognize some realistic limitations. Some inhere in the disciplines and some lie in the way universities are organized. The university is, first of all, *a* resource but not *the* resource for society in dealing with its problems. It is *one*, and one whose importance obviously depends on what is needed. The university's many disciplines do not present equal utility for society. Law, medicine, and other professions engage in practice; the basic disciplines do not. Perhaps some of the latter (those farthest removed from the quantifiable?) should indeed "only teach" and not attempt problem-solving. It depends on what kind of problems anyway. Technological problems, far more than social problems, can elicit university response with more confidence of fitness and success. Yet progress is most needed where the coupling is inherently hazardous: the social sphere. Where public policy questions are at issue—and that indeterminacy is exactly what excites us most—there has to be room left for open debate; and if scholarship is applied, care must be taken not to confuse social judgment with scientific evidence or to give commitment precedence over investigation. Invoking the resources of the social sciences does raise new questions for both universities and government: the variables are often not under control, other institutions and organizations often have to be included, there are limitations on experimentation with human lives, and second-generation problems may be greater than those "solved." These limitations are showing themselves in some critical response, both in Congress and out, to the RANN program of NSF and in the warning of Professor Robert A. Nisbet, University of California, against "the ever present temptation of government to see the social scientists as physicians—called upon to answer ad hoc questions today, yesterday if possible—when they are, at their best *physiologists*. . ."

Several limitations also exist within the university's own organization, but most of these, unlike those just discussed, are human-made and human-remedied. Resourceful as it is, the university cannot be all things to all people. Each must decide what it wants to be to what people; yet most universities have a poor mechanism for so deciding. Also, internal university governance puts two monumental dampers on effective public service: discipline-bound departmental organization and discrimination against public service as a justifying factor for salary increases and promotions. The prevailing internal university system, generally speaking, is not supportive of the public service philosophy.

Both to capitalize on the opportunities and to live within these limitations, the most urgent needs is for new structures—new couplings between university and problems. Three years ago, the Special Commission on the Social Sciences of the National Science Board criticized current organizational hiatuses and proposed the establishment of several new problem-oriented interdisciplinary institutes to focus on policy and action, through "close relationships with the agencies or organizations faced with the problems." The Committee on Intergovernmental Science Relations of the National Science Foundation has called for "new institutional arrangements. . .between academic institutions and state and local governments" to deal with science and technology problems, citing the Urban Observatory Program as an example.

So something is in the wind to restructure the resources of the university to offset, as

another national report says, "the whole tradition of specialist scholar-teacher-student relationships (which) works against concern for the arts of practice. . ." The group went on then to propose a new academic entity, a Graduate School of Applied Behavioral Science, significantly to be administered "outside the established disciplines." Structural redevelopment may be ragged, but universities are creating new functional, problem-oriented institutes and centers at an unprecedented rate–approximately 190 were reported in 1970 on urban problems alone, and new structures for environmental concerns must not be far behind.

A companionpiece to these developments is the need for a new look at the old campus structures for extension and public service, both cooperative (agricultural) and general. The problems outside are now different. Is the old organization, old staff, old orientation now adequate for focused outreach, for a far broader interface with government, and for a far more varied agenda of challenges? Each institution must answer for itself and some have already done so; but it is clear that, in general, this is a place where history and tradition drag the universities down badly.

But if all our academic houses were put in order, there is still the other end of the axis. The university deals with a problem in one sense but it really deals with people *about* a problem—people who suffer, who are concerned, or who are responsible for doing something about it. They are individuals, groups, and institutions. How are such collaborators organized for making fruitful liaisons? University personnel may not know where to go to deal with business. Going to the government often reveals a fragmentation of agencies and responsibilities that boggles the mind; and, increasingly, multiple levels of government have to be seen in uncertain sequence. Liaison difficulties are familiar in relation with the Model Cities Program, RANN, Title I of the Higher Education Act, the Office of Economic Opportunity, and the late lamented State Technical Service program. These experiences give some measure of how frustrating attempted linkages can be where governmental agencies have given even less attention to coupling mechanisms. No one would wish for a monolithic order to replace the present chaos, but wherever the academics and the civil servants agree upon a mutually advantageous partnership for serious collaboration, some *planned* relationships would seem to be in order, including how to involve needed third parties, such as industrial and civic groups. There is one natural linkage, albeit fragmented: academics have their professional counterparts in government agencies, with a useful serpentine parade in from the campus and out from government, and vice versa. But deliberate instruments—carefully devised channels—are also needed. Federal departmental and agency liaison arrangements plus minimal government-wide coordination are needed; and if the current advocacy of "a central point" within the Office of Education* is too simplistic, then the challenge is for the proposal of something better.

Like most commendable human efforts, problem-solving calls for funds, and unlike many, it may not and often does not generate income. What should be done by private contributions and by government support, by fees and by taxes, or by other means, is not something to be abstractly prescribed. The point here is that society cannot expect to tap the university as a resource unless it supplies special additional funds to pay for faculty time and to bring into being new structures and new staff. Exhortation will not help. Budgets bespeak the real priorities. This must be said because there is much talk now of making public service self-supporting, perhaps because of confusion between classes and programs. An adult may justifiably pay a fee to cover the cost of a particular class when it is personally-oriented rather than society-oriented, but what individual is to pay the cost of an environmental program or an anti-poverty program? We cannot be serious in talking about fee-funded schemes or priority-substitution in the universites as a solution to national problems. It was an overly optimistic observer who a few years ago predicted that the federal government would soon present to universities more funds for problem-solving than for research, but he correctly discerned that a better funding balance is required if the full knowledge spectrum is to run smoothly from discovery to social policy and action. This an area in which, at least as a beginning, categorical public grants tied to pressing problems as identified by government would make eminent sense. It would get action. It would offset much of the natural university reserve. It would invite new structures. And to elicit the full potential from academic institutions, each public program might expli-

*Made by the National Advisory Council on Extension and Continuing Education.

citly provide, where appropriate in addition to its main thrust, for the funding of a manpower-training component and a research-for-policy or research-for-method component. Certainly, not all eggs should be put in the Title I basket, with its lack of vocal clients and its over-easy assumption that the old agricultural model simply needs to be urbanized.

Finally, even assuming that government is by nature better fitted to *identify* problems or flashpoints, universities will still have difficulty in deciding *what* problems to help solve. For sheer manageability, they cannot do all that is put before them; furthermore, they should expect to be judged by what they will *not* do as well as by what they will. Some problems will be so controversial that they can be serviced only in limited ways. Consensus or lack of it on questions of public policy cannot be ignored. It may not reveal territory conceded to be forbidden, but it can suggest methods conceded to be counterproductive. All this calls for selectivity by rigorous self-discipline, with suitable criteria. It also calls for better mechanisms than most universities now have for making choices, or for drawing the appropriate line. Nevertheless, with awareness both of hazards and of techniques which will not compromise, colleges and universities need not be immobilized out of fear of being "politicized," if they follow four criteria, admittedly easy to state but hard to apply:

1. Through some internally-accountable but socially-responsive mechanism, they themselves decide what to do—not pressured, not told, not bought;
2. They undertake what will have some professional significance for themselves and their faculties, with some feedback to help their teaching and to guide their research;
3. They not confuse themselves with public policy-making bodies (political parties, legislatures, elected officials, and government agencies);
4. Remembering that they are on tap and not on top, they confine themselves to knowledge and its uses, as distnguished from power and its uses.

On the non-university side of the equation, the fragility of the university should also be recognized. Unless its integrity is respected and preserved, all parties are the losers and the service potential is negated. This means not expecting the university to do that for which it is not fitted or that which will jeopardize such intellectual neutrality as is given mortal man to muster. Impatient governments pressed for social solutions have not always shown such restraint, and specialist-blinded universities have not always been sufficiently self-denying (witness "the myth of Immaculate Conception. . .among. . . behavioral scientists" in the Camelot case). Whoever is on the other end of the university's axis of cooperation—a community, an industry, or the federal government—*both* parties to the coupling have "rights," "prerogatives," and "accountabilities" which must be respected. Mutual interest has to start the relationship for problem-solving; mutual respect has to carry it on to completion. If the parties cannot get together on that basis, they should not enter partnership.

CONCLUSION

As itself a great knowledge bank and as the home of the contemporary trustees of all branches of that knowledge, the university obviously is a resource which has to be harnessed into any major effort at solving the nation's problems. It can do so in ways most familiar to it—by teaching, yes, but by that type of teaching which is mated to social purpose and thus prepares some of the future professionals as "practitioners" and "translators" as well as Doctors of Philosophy; and by research, yes, but by that type of investigation which runs imperceptibly into policy, action, and service. In addition, a tighter linkage will need to be forged between higher education and a problem-plagued society, so that understanding will come to its full fruition: human use. Such need is recognized by spokesmen at all points on the knowledge spectrum. Rene Dubos has said: "Its increasing alienation from the problems which are of deepest concern for mankind might well transform the anti-utopian outbursts so characteristic of our time from a literary exercise into an anti-science crusade." We have already cited several social science reports, governmental and academic, which strongly recommend greater attention to "this *dual* concern for application and understanding." Perhaps this unanimity springs from the professionalism which it now takes to operate what has been called "the non-ideological welfare democracies." Such democracies, spurning solutions by ideology or by some blind faith, must rely on solutions problem-by-problem,

pragmatically on their individual merits. This steady shifting of problems from politics to expertise, with its admitted limitations, is a mark of our times, and one to be nurtured. It springs from putting a deserved premium on knowledge.

Even if we have come to where we are by an overwrought and unchecked technology, the future is not likely to call a moratorium on the use of such knowledge. It might seek a counterweight. Some scholars see that counterpoise on the horizon now in the fierce world-wide assertion of claims to civil rights, to equality, and to personal and group autonomy. The interplay of man and machine, equality and technology, may still be the human agenda for many decades ahead. But whether technology or human counterpoise, the university is a highly relevant resource. With due regard to university limitations, to mutual respect among cooperators, to political and governmental vagaries, to the prerogatives of industrial and civic groups, and to all the other caveats, it is still true that more can and ought to be done, and that we need to perfect a better docking mechanism for doing it.

Higher education needs to liberalize the mission with which it feels most comfortable—to take its cues from problems rather than disciplines alone, to move from knowledge bank to knowledge use, to develop a strategy of locking competencies onto problems, and to add a developmental component which will put institutionalized intelligence at the service of society. The essentials will be a philosophy, a commitment, a programming organization, a facilitating staff, and, above all, a determination to "do something about it," with focused impact.

All of us still face the haunting question which Thomas Huxley asked long ago as he contemplated the great extension of man's capacity by machinery, science, and education: "The great issue about which hangs a true sublimity and the terror of overhanging fate is, what are you going to do with all these things?"

HIGHER EDUCATION: MODIFICATION TOWARD CHANGING NEEDS AND CONCERNS OF SOCIETY

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May 1972

Today's rhetoric surrounding higher education is liberally sprinkled with pronouncements that our colleges and universities constitute a valuable national resource. Understandably, such statements were and are predictable elements of higher education's recent efforts to obtain more public and private support. Unfortunately, as often happens with frequently repeated assertions, the statement that higher education is a national resource has become a cliche. As such, to some its continued validity is suspect, and to those who do accept its validity, no analysis or explanation seems necessary to indicate its meaning.

Nonetheless, it cannot be seriously questioned that our nation's colleges and universities do constitute a major national resource. Nor can it be seriously questioned that it is a resource of greater use to some elements in the nation than to others, and a resource that is more relevant to certain national concerns than to others.

In large part, it is because of general recognition that it is an important resource and has responded effectively to the needs of the nation in the past and continues to respond to certain needs today, that it is now being criticized for failure to respond effectively to new demands. Thus the question is not whether it is a major national resource, but whether it is functioning as well as it might in today's culture, whether it is, in some important ways, out of phase with our present needs, and whether the services it now renders are not entirely responsive to present problems in our nation. Past successes, no matter how numerous, do not offset present inadequacies or failures. And, for several years there have been criticisms of higher education's failure to respond to certain needs.

In 1966, Mayor Collins of Boston said:

> . . .[our universities] have made a fantastically great contribution to scientific advancement and to the growth of industrial know-how. However, they have made precious little contribution to the improvement of our urban life. . .

Three years later, Mayor Stokes of Cleveland reiterated this theme:

> And yet, the hoped-for level of cooperation between these colleges and city government has not yet been achieved. The urban issues of 1969 have been with us for a long time, and many colleges still appear reluctant to come forward and help.

In 1969, John Gardner described the failure of higher education in greater detail:

> The colleges and universities of this country have not responded impressively to the urban crisis. They have been notably laggard. There is, of course, a great amount of activity going on in higher education that has the word "urban" attached. But many college leaders are not satisfied with the quality of those activities, and I share their view. Many of the urban affairs centers that have sprung up on college campuses are not to be taken seriously. Much of what they are doing today can only be described as dabbling. Many are re-inventing the wheel and not doing a very good job of it. Very few have pursued any aspect of the urban crisis with the intellectual rigor it requires. Even fewer have accepted the real world of a city on their doorsteps as a laboratory in which they can advance those intellectual pursuits.

The criticisms have not been confined to higher education's failure to respond to the urban crisis although it is understandable that much of it has centered on this issue. There are also criticisms that higher education has not met fully the educational needs of older people, disadvantaged students, women, and others who do not fit the traditional mold of the college student.

The call for a new and massive commitment of higher education to the major concerns of today is supported by significant elements within student bodies of our colleges and universities and finds some support in the administration and faculty. There are some, however, within the academic community who urge that the call be resisted. Among these is Sidney Hook, professor of philosophy at New York University, who in 1968 said:

> We cannot believe that the mission of the university is to lead mankind to a new Jeru-

salem. Any attempt to do so would destroy among other things, the university's role to serve as intellectual sanctuary when the winds of popular passion blow. . .The goal of the university is not the quest for power or virtue, but the quest for significant truth. . .

And in a similar vein, Irving Kristol recently asserted:

The collective responsibility of the university is education. That is its original mission, that is its original purpose, that is the only thing it can claim expertise or authority for. To return to this original purpose, with renewed seriousness, would be an action at once radical and constructive.

While the calls for action seem to request new services, the resistance is couched in terms of returning to fundamental purposes. The semantics of the controversy have created a false dichotomy that obscures more basic issues, and that has led to a discussion without communication. "The quest for significant truth" must surely include basic research on the problems of an urban culture. In the past, we have defined the university's educational mission sufficiently broadly to include professional education, some of it at a relatively applied level. It is in our colleges and universities that almost all of our professional manpower receives its training, and in cooperation with professional associations, it is our universities which provide programs to keep these professionals current with new developments in research and practice. University-based research continues to provide major breakthroughs in science and medicine. And the land-grant universities formed an important element in the complex of institutions that virtually revolutionized American agriculture. The community college movement within higher education responded to the need for extending educational opportunity. All of these responses to social demands were accommodated within higher education without destroying it. Quite the contrary, it was undoubtly these responses to the nation's needs that gave American higher education new vitality. But the needs were rarely anticipated by higher education. Only after the need existed, and was translated into relatively effective pressure on higher education did it lead to an appropriate general response by higher education.

The ability of higher education to respond appropriately to today's problems is complicated by the nature of those problems which, even when initially biological or physical in nature, are enmeshed in situations heavily influenced by social, psychological, economic, and political factors. And the major problems tend to be predominantly social rather than physical in nature. Other factors impede even the most well intentioned college or university in making appropriate responses:

—Some new problems and demands involve constituencies that may be without formal structure, that may be difficult to identify, and that may shift quickly in membership and leadership.

—Neither the problems nor appropriate responses are easy to identify. What may seem at first glance to be a need for more physicians or a call for community clinics may become on deeper analysis a need not only for more physicians, but also for more new and expanded para-medical education programs, new delivery systems, shifts in medical education and practice emphases, and development of community health teams.

—Demands on particular colleges or universities from different constituencies may conflict with one another.

—The state of the art, i.e., basic and applied research in the social sciences particularly, is not yet sufficiently developed to aid the social problem solver.

—The problems themselves are more complex and are of such a nature that the research process itself often becomes an uncontrolled variable.

—Solution of many of today's problems require individual and/or collective attitudinal and behavioral changes, a goal much more difficult to achieve and evaluate than the cultivation of corn or the harnessing of nuclear power.

All of us could list many more factors that make our major concerns today more difficult to deal with not only for colleges and universities but also for other agencies. There seems little progress in any quarter. But it is all too easy to use the arguments about the traditional role and limited functions of higher education combined with the unusual difficulties of the new problems to justify no response at all. On the other hand it would be tragic if higher education made responses only in terms of easily translatable demands for immediate serv-

ices of one type or another. Colleges and universities should not generally use their resources in providing direct services to the poor; however, higher education personnel and students may well contribute advice, energy and time, to provide such services through appropriate agencies. And activities in these agencies may provide valuable learning experiences for both faculty and students. But this should not distinguish it from a school, a workshop, a government office, or any other agency which also provides a setting in which appropriate learning experiences might be arranged.

Indeed, I would argue that higher education's most appropriate response to the nation's needs and the most effective public service which it could undertake at this time would be to analyze in some depth the changing educational needs and the new research concerns of society and to modify and augment its educational approach and programs and its research capabilities and undertakings in the light of these changing needs. In essence, then, I am suggesting that higher education be more aggressive today than it has been in the past in identifying the need and seeking to develop that part of the solution which might be affected through its educational program.

To accomplish this, higher education must turn its attention from itself and look outward to the broader context in which it exists and, indeed, which it presumably serves. I am not suggesting that all of higher education now is concerned solely within itself, but in some institutions and in certain aspects of many institutions, there is a type of self involvement which any professor would label provincialism if he observed it in any other segment of society. In much of higher education, students are admitted to the institution on the basis of examinations that predict a person's ability to handle academic programs, he is then evaluated on his success in graduate school; and success in graduate school may lead the individual back into the collegiate structure as a faculty member. The quality of colleges is often determined only on the basis of how selective they are in choosing students who are successful on academic programs, or on how many of their students successfully compete on examinations that predict academic success in graduate school. This reminds me of a conversation that I overheard recently in a Washington restaurant. Two alumni of one of the nation's prestigious colleges were discussing a conversation with the dean of their Alma Mater. He apparently had informed them that the percentage of students going on to graduate school from this institution had dropped sharply in the last few years. The two alumni were quite sincerely puzzled for the reason and the consequences. Their concern was sharply put by one who asked "What on earth can they be doing? With a B.A. from there they aren't qualified to do anything but go to graduate school."

The motivation for modification of educational approaches and programs is nonexistent unless those who make educational policy recognize important goals and are interested in determining whether the present program serves those goals. Goals internal to higher education have been recognized and to some extent effectiveness of programs in meeting such internal goals has been considered. Certain external goals have also been recognized, but many have not been modified in the light of rapidly changing societal needs. And certainly not all types of institutions would respond evenly to all goals, but too often higher education has attempted to determine differentiation of functions for various institutions on the basis of educational programs as such rather than the educational mission of the institution in relation to identified goals.

The rate at which knowledge is changing and expanding has serious implications for educational policies. To date most of the impact of the knowledge explosion has been on costs and new specializations rather than on any reexamination of total educational approach. Another implication, particularly when coupled with the need for social problem solvers, is that much less of the total higher education enterprise should be involved with the transmission of knowledge as such and much more with the development of problem solving approaches, analytical ability, and the ability to identify the types and sources of knowledge needed for any particular problem or task. The shift in emphasis would be difficult to make, however, since many of our faculty members today are chosen on the basis of their subject matter competence rather than on their ability to design programs that enhance a student's ability to think both critically and creatively. Nor has there been much evaluation of college and university programs in terms of whether they equip a student to function effectively as a problem solver.

I am encouraged that colleges and universities can look at the needs of society and make educational responses. Meharry Medical Col-

lege has done just that in its health education programs. After an intensive examination of its educational program in the light of health care needs, Meharry came to the conclusion that substantial changes must be made in the educational experiences provided the student and in the college's relationship to the residents of its surrounding area, if the institution wished to ameliorate what it had identified as a major problem, the delivery of health care to the poor.

The College of Human Services, a new institution, related its educational mission at the outset to developing capabilities that it identified as being needed in various service agencies. A carefully integrated work-study program provided not only reinforcing motivation for the student, but also an opportunity for continuous evaluation of the student's growing ability to undertake his new responsibilities.

Several other institutions are also considering and experimenting with new educational approaches. Unfortunately, many faculty members lack either the interest or educational expertise to examine intelligently their own educational activities. Nonetheless, I am convinced that growing numbers of those in higher education are willing to reconsider their role in society, particularly in terms of their educational and research functions. And it is through these particular functions, that higher education can make its most important contribution to the solution of today's problems while continuing to provide the necessary programs for earlier social concerns which continue with us. To adapt fully to today's changing needs, existing higher education institutions must recognize that their educational programs retain their vitality only to the extent that their major functions have significance in the broader society in which the program exists.

THE UNIVERSITY INTERFACE WITH SOCIETAL PROBLEMS— CONSEQUENCES AND PROSPECTS

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May 1972

It seems inevitable that for the next twenty or so years the new and major incremental federal support for universities will be to purchase their services in an effort to solve national problems.

My use of the term universities is restricted largely to those 50 or fewer who are heavily engaged in graduate and professional studies and in grant and contract research. It is in these universities where the talent and capacity for such large scale interdisciplinary national problem solving efforts may be found. Such efforts are needed in problem areas such as low temperature power transmission systems, power policy, tunneling technique, earthquake damage prevention, solid waste disposal or recovery, air pollution reduction, engine emission control and a host of other technically involved problems. If these are to be effectively handled, there needs to be an application of the efforts of many talented persons. Such persons in large numbers capable of doing basic research are found only in universities. They have some unique sets of capacities and are quite deficient in others. Thus universities alone cannot be counted on to do the problem solving and final application and implementation of solutions. Industry and government, among other sectors of our economy, must be involved.

If we must solve these problems, and we must involve universities and new support to universities is to come only through such involvement, it is clear that universities must change if they are to become capable of such response. We have a declining balance of trade, a falling back in our high technology industries, a crying need to solve internal national problems, indeed a public demand to do so, and the expression of this is found in the hundreds of millions budget increases proposed in the '73 budget for work in these directions.

Can we expect the universities to join in the partnership needed? What will be the consequence? First let us look at the universities' own present "environmental" problems.

First, the research universities undoubtedly are going to have a reduced enrollment base. Possibly for the next five or so years enrollment may stabilize, but from then on the number of students probably will decline. This, of course, would have an immediate effect upon the finances of the institution. Tuition income or state support calculated on student counts will affect both public and private universities. They are all presently decreasing the quality of their programs due to the decline in financial support. Student-faculty ratios are being eroded, equipment needed is unpurchased, and graduate student support is seriously declining. The proportion of the total public or private dollars given to higher education will remain approximately stable. It is hard to imagine higher education immediately being put in a significantly different priority circumstance. The private institutions are at present so hard pressed for financial survival it seems that their degree of freedom to make new responses to new circumstances is indeed limited. Some may not even survive as universities. Thus, those very institutions which will be called upon to make the most immediate and effective response are not going to be able to do so easily.

Another circumstance affecting the response capacity is that resource allocations that are made to higher education will not go to this class of universities. Junior and community colleges will receive the funds to cover increased student numbers and the equalization of educational opportunity calls for giving dollars to the educationally disadvantaged to cover their educational costs. Nothing or very little of these funds can be used to cover the costs of their education.

While all this is going on, the acceptance of the importance of liberal education is declining. Proprietary schools by the thousands are said to enroll almost as many students as are in traditional colleges and universities. Industry is putting more dollars into their in-house and career-directed education than is spent in the universities. The dimension of these activities may be questioned but that it is increasing in importance as an avenue for education outside of traditional institutions is not in question. We must discover what this will mean to universities.

I suspect the increasing cry that universities, indeed all of higher education, should engage in massive efforts to innovate and be more responsive comes from this changing set of expectations of education: namely, to be useful, applicable and acceptable to the students.

In viewing any proper response to these criticisms, it is well to review what universities have done and do so well and what they were designed to do in the first place. They are institutions serving to conserve knowledge and to transmit it accurately to subsequent generations. This is done by faculties, libraries, laboratories and through students and their education. Through the training of persons who carry out professional careers necessary for the survival of our complex society, they have a fundamental role. The liberal arts programs of the universities are designed and served well to educate a population which must have leaders and be ever increasingly sophisticated and perceptive. These institutions then create, transmit and conserve knowledge. This is a unique role of higher education and one essential for our survivial.

The people who urge higher education to make major changes must fail to understand the basic purpose of traditional universities as special institutions with special purpose in our society. Maybe they want them to be what they never were meant to be.

To assess the impact and capacity of universities to develop an effective interface with society for problem solving, we should review what is involved in problem solving. There are many ways to analyze this but some obvious steps include:

1. *Basic research.* This is the beginning and universities do this very well. In fact to disturb or neglect this role would be disastrous There is no need to enlarge on this.
2. *Exploratory development.* This follows logically from basic research and is like the kind of work done in advanced engineering research and in carrying on work coming out of basic research in the physical sciences. Interrelationships, interactions, alternate lines of development may also be involved in this step.
3. *Engineer development.* This leads to engineering development where a particular system is designed, developed, evaluated from its scientific, technical and economic features.
4. *Implementation.* This step will necessarily lie in the province of mission oriented federal agencies and, of course, industry.

Questions of public policy, questions of cost, questions of priorities, must, of course, be introduced before the final implementation is achieved. However, the phases from basic research to the final solution of a problem are listed above.

Now, where do universities fit into this. They do, and are almost unique in doing, basic research. They do exploratory development well although they do not have unique capacity here. Mission agency research laboratories, the National Bureau of Standards, and certain industrial laboratories have equal competence. When it comes to engineering development, clearly the university is out of the system. The design of a particular system, how it is to be particularized so that cost analysis, material selections, design for bidding, etc., are better done outside universities.

Implementation and application are, of course, the solution phase. Universities are not and should not be involved in this. The real problem to be solved by those attempting to design a system for solving national problems is to find an effective bridge between 2 and 3 above. How can we extend university expertise to be moved to close the gap with industry and government who have the responsibility for 3 and 4. This is what the RANN program of the National Science Foundation is designed, we hope, to do. This program is not just applied research, but research applications *for* the national need, basic research, traditional research, applied *to* national needs. What is asked is that universities respond by making proposals to do research and to seek applications for the solutions of problems which are nationally prominent. It is a new program and we as yet have insufficient evaluation of its effectiveness or impact on the university. It is clear that major institutions in our states have responded and come forward with imaginative and well founded proposals in keeping with the program. Many interdisciplinary groupings and new combinations of scholars are being involved but not without major perturbations, I suspect, on the institutions in the long run. Possibly the best way to stimulate discussion is to ask a number of questions that seem to be needing answers as we move into the next decade. For instance:

1. As we use federal dollars to encourage new university organizations and efforts we are establishing a new measure of success. A RANN grant and large interdisciplinary group is quite different from the project grant of the past. What will this do? Will there be a new research elite? What is being lost? Will the faculty be further divided into a two-class system in the basic disciplines?
2. In order to protect and preserve the fullest level of effectiveness of the traditional university should the RANN type university be selectively developed? We have tried all sorts of federal efforts to change institutions to do special jobs. All the way from land-grant institutions established to *Themis* by the D.O.D. Maybe a RANN-Grant set of institutions like the Sea-Grant ones would be a better way to approach selected universities. If so, they will need endowments to give security to this redirection from traditional objectives.
3. If we are to change the fundamental nature of some universities, how do we reason the consequences? What is the role of states and other constituencies in concurring or redirecting this response to national needs? Is the student to be calculated as a significant component in the national problem solution enterprise? If so, how is the curriculum to be integrated?
4. The federal government, responsive to its needs, may seek services from universities, but what are the consequences? They seek services but no recognition of the full costs. Is this a viable relationship? The questions about this relationship are central to the whole discussion. Who would a year or two ago have even seriously asked "how can we reorganize the university so it can be more effective in problem solving?", let alone have thought anyone would believe we should do this. Now everyone seems to want to do things to universities. This is called innovation.

In conclusion, it seems to me that now comes the time when the federal government must make explicit its obligation and long-term commitments to universities if it expects these universities to respond as institutions. Up to now, there has been no explicit federal obligation or policy recognizing the university as a national need. Ironically, some federal officials, thinking about their own mission requirements and the need to solve their problem, say, "You put money into a university or into higher education and nothing comes out." This is probably very true if their test of what we do is problem solving. At the same time, they overlook the traditional role of universities and give this no value as far as their agencies are concerned.

To do something new and take on a new federal job seems to me to require that the federal programs take into account the consequences that their interests and support and their requirements would have upon the traditional role of the university. This must be examined very closely. It must be clear that the federal interest is to maintain and support the institution so they, in turn, can respond to the needs of the federal government.

Institutions of higher education have a record of response, a capacity to innovate, and a desire to be useful. In this they have a phenomenal past record. I am confident that for the next two or three decades, the response to a new set of needs will be as it was in the past. All that I plead for is that the institution be given the additional capacity, the new resources, as well as the new opportunities so that the valuable contributions to society in the form of traditional education and research will not in any way be sacrificed so we can add the mandate of problem solving to our list of obligations.

THE UNIVERSITY AND APPROACHES TO PROBLEMS OF STATE AND LOCAL GOVERNMENT

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May 1972

The case study I am going to present is that of a university-based group which during the past two years has attempted to direct its principal research activities to the real and immediate problems facing state and local government in the New York area.

The effort is worth describing, not only because we have been moderately successful, but also because I think we have learned a great deal in the process of getting this program underway. . .about the formidable barriers that exist within the university organizational structure as well as those that exist outside in working with state and local government.

Let me emphasize that the approach we have taken in the Program for Urban and Policy Sciences at Stony Brook has been a highly pragmatic one. We are frank to admit that the issue of whether this practical approach is—or is not—proper for a university, has not overly concerned us. Nor have we allowed ourselves to dwell on the favorite question of academics, namely that of basic versus applied or problem-oriented research.

It seems clear that universities in this country represent one of the nation's major resources of talent. Moreover, they are peopled by large numbers of faculty, students, and administrators who are more sensitive than ever before to the problems facing our urban areas. . .and the opportunities and challenges they present for intellectual involvement. Finally, I would only add that throughout the history of American universities we can find a number of historical precedents where universities have demonstrated time and time again their ability to respond, and to respond effectively, to those societal problems on which the nation placed a sufficiently high priority. Let me be quick to state that no claim is intended, in discussing the Program for Urban and Policy Sciences at Stony Brook, that it is either unique or the first of its kind. Nor do I claim that the model we have adopted can be taken over, as is, to other university situations. Much depends on the character and traditions of the university, its faculties' self image; whether it is publicly or privately supported; the presence of other related university efforts; and, finally, the relation that it sees for itself with respect to neighboring governmental units.

The Program for Urban and Policy Sciences grew out of the efforts of a few faculty members who came together about three years ago to discuss what they, as individuals, could contribute professionally to correct some of the problems of our cities and the environment. Our backgrounds were in the hard sciences—engineering and economics.

Our goal was not merely to apply the collective skills and techniques we had acquired in our disciplines to "solving" public problems but to work in collaboration with public agencies to effect beneficial change—in other words, the real goal was to be implementation, not merely problem solving.

The first thing we learned very quickly. . . which should come as no surprise to many of you. . .is that most public agencies shy away from working with university professors. I think Frederick O'R. Hayes, formerly Budget Director for New York City, and now a part-time professor in our Program at Stony Brook, has put his finger on the essence of the difficulty of governmental units working with university types when he wrote . . . "The University researcher wants first of all a publishable paper, and if this happens to be relevant to the city's problem, only then is a special relationship possible. Moreover, university researchers tend to emphasize their expertise and underplay the fellow who organizes the effort and brings it to fruition." In other words, state and local governments are not about to take seriously, anyone who comes in simply wanting to study them and leave. The result is that access to the real problems of these governmental units, and to the data these agencies possess, is denied. Therefore,

LESSON I: You have to prove you have something to offer to the administrative staff and line personnel of the agency with whom

you are seeking to establish a relationship, and this must be something they can perceive as being relevant to their operation, before the doors begin to open. This usually means, initially at least, problems must be chosen that offer a prospect for real pay-off to the agency. Thus, you must be prepared to work on the same "time scale" as agency personnel collaborating on the project.

The first agencies we established contact with were on Long Island (where Stony Brook is located), and in New York City. We deliberately chose to work in some of the relatively hard urban service areas such as sanitation, fire protection, health services delivery to get started, rather than in education, welfare, or housing. This distinction between hard and soft services, while somewhat arbitrary, nevertheless, is important. Problems in the hard areas tend to contain technological components. Moreover, the goals of these services are fairly clear and relatively free of controversy, e.g., everyone can agree that keeping the streets clean is a definite and measurable function of the Sanitation Services delivered. This is not true for the soft services—here we have considerable difficulty in arriving at a consensus on what good services mean; let alone being able to measure their output.

Let me make it clear that I am not saying these softer urban services are less important. Quite the contrary, undoubtedly they are at the core of much of the deterioration in our urban centers. What I am saying is that attempts to bring about change in these areas is much more intimately tied up with the public's attitudes and, consequently, the potential role of analytic input at this stage is bound to be peripheral.

LESSON II: Initially at least, stick to areas in which there exist leverage situations for bringing about change. The suitability or vulnerability of urban service problems to analytical input starts with a determination as to whether well established analytical techniques can be effectively adapted to the particular public sector problem. It extends to an appraisal of the organizational and institutional rearrangements which must be modified if the changes are to be implemented—on to the perception of the elected officials, the administrators, and, in many cases, even the union leaders of the problem and the impact its solution is likely to have on the organization as a whole. It depends on the external influences that are forcing the issue or issues toward a decision point. *What this means is that taking any particular urban problem out of the context in which solutions are to be implemented, reduces the likelihood it will ever amount to anything more than another study.*

LET ME GIVE TWO BRIEF EXAMPLES

In our work with the Environmental Protection Agency in New York City, the initial problem chosen (after lengthy discussions between both parties) was the rescheduling of sanitation men to enable New York City to meet the extreme demands placed on its manpower and equipment resources. This was a resource allocation problem amenable more or less to standard Operations Research types of analysis. A second point—negotiations with the union for a new contract were coming up and the City for some time had been making much of the productivity issue. On the other hand, there had not been a change in work practice agreements between the City and the union for forty years. Moreover, the union was extremely strong and headed by a bright, hard, cagey individual—John DeLury. We realized early that the major problem facing any proposal in this area was the ability to convince the union and John DeLury. We, therefore, began to view our role as brokers between the City and the union—which meant that we had to insure both parties—the City and the union—that they had a vested interest in the outcome of the work.

The case study we have written up gives many of the details, so let me skip over them and tell you the final outcome.

The City and the union have adopted our plan for a radical new work schedule. For the sanitationmen—it will mean being able to plan ahead thirty weeks and know their weekly work schedules. It will also mean more two and three day weekends. For the City—it will mean a saving of $11,000,000 each year and an end to a backlog of weekly uncollected garbage. For John DeLury and John Lindsay it means both can take credit for having acted in the best interest of their constituencies.

The second example is our attempt to work with volunteer fire departments on Long Island. I say *attempt* because our efforts here failed. They failed not because these volunteer fire companies lacked problems or we

lacked solutions. They failed for two reasons:

1. They did not perceive their operation as one which required improvement;
2. The diffuse structure of the volunteer fire departments' organization into many, many small fire districts severely curtailed the ability for any centralized decision-making.

Lest you be tempted to view this process of working on the problems of state and local government as the height of frustration, let me hasten to add that once your credibility as a worthwhile resource for the user agency has been established, the flood gates open up. The reasons are quite simple.

Most responsible public officials, I think, fully recognize the need for trying, if not to solve—at least to ameliorate the problems that are pressing in on them from every side. Many of them also recognize the *potentially* valuable role the so-called technical experts in the university can play. Their central problem, however, that they face daily is how do they create and take advantage of the opportunities to institute beneficial change in the existing system.

Once you, as a technical expert, have established your willingness to use and adapt the highly developed tools and skills that have been evolved in the university to not only generate new alternatives, but also work to implement them, then they are quick to cooperate fully and effectively.

Today, some two and a half years after our intial undertakings, our informal group has become a regular university program, with its own faculty (six) and its own graduate program in which we now have enrolled some twenty-five students. The central administration of SUNY in Albany has also recognized this kind of research application as a legitimate university activity by establishing a university-wide Institute for Urban Sciences Research, with its own staff. At present we are working with public agencies on a number of problem. For example:

—We are working with the Department of Sanitation in New York City on a major undertaking for improving the entire waste handling system in New York City.

—We are working with the Nassau County Criminal Court System on reducing the backlog of criminal cases.

—We are working with the staff of the New York State Assembly on legislation which would change very substantially the character of the treatment of mental health patients in New York State.

—Our students are working with individual towns on Long Island on recycling of solid waste, transportation, airport design, housing maintenance policies.

Let me end my talk with one or two brief points having to do with getting a program like this started in a university.

As you might expect, the barriers of institutional resistance are likely to be considerable. There are several requirements which we feel were essential to our program getting off the ground.

—First of all, you must have a nucleus of faculty members who are fully dedicated to making the undertaking a success. Without this total commitment, I don't think it's possible to attract the interest and support either inside or outside the university.

—Secondly, the faculty who wish to participate in this kind of activity must be treated as equals—which means the same potential for receiving promotion and tenure. Few faculty members receive the respect of their peers if they lack these prerogatives. This issue of faculty acceptance or academic respectability is a powerful operating influence in all universities. The long-term viability of university programs of the type I have been describing depends critically on receiving these acknowledgements.

—A third point—there must be a strong backing from the top administrative officers in the university. Decision-making in a university is often left in the hands of committees—which works rather well in many cases—but is hardly the kind of decision process conducive to charting new directions, either in education or research.

—Finally, the right kind of money helps. Attempts to create new institutional arrangements both within the university and between the university and state and local governments, require initial funding which is not overly restrictive. We are fortunate in our own program in receiving grants from the National Science Foundation, IBM, and the Esso Education Foundation, which allowed us to approach various public agencies without the need to ask for money.

As many of you are aware, there are obvious similarities between our Program in Urban and Policy Sciences at Stony Brook and the Land Grant Schools of Agriculture. While the comparison should not be overdone—nevertheless, I think there is a critical need today for an urban version of the Agricultural School.

CASE STUDY

Peak Day Clean-Up Program in New York City—An account of the collaboration between the Planning Analysis Staff of the Environmental Protection Administration in New York City and the Urban Science and Engineering Faculty.

Background:

Every two years or so, New York City goes through a slightly hair-raising experience in which it attempts to hammer out new contracts with its municipal unions. At an early stage in the current round of negotiations, a policy decision was made in the Mayor's office to push productivity and work practices as one means of trying to reduce the rapid increase in the number of City operating personnel.

This decision was greeted by members of EPA's Office of Program Analysis and Development and Bureau of the Budget Analysts with some apprehension. They had jointly discovered that there was insufficient manpower under the present work schedule to meet peak-day demands. The result was a backlog of uncollected refuse that remained on the streets from every Tuesday through the end of the week.

The essentials of the problem are as follows:

—The day-to-day variation in refuse collection requirements only are shown in the graph on the following page.

—The present work schedule (called chart days) brings in equal numbers of men during the week. Night collections and Sunday overtime are used to take care of the backlog—at considerable expense to the City and inconvenience to the men.

—The refuse generated in New York City is increasing at the rate of 4-6%/year.

—Any change in work schedule would have to be agreed to by the union and interacts with a host of other issues.

—No major change in work practices had occurred in the Department of Sanitation in over forty years.

In 1968, this same group of analysts tried as members of the "Mayor's Task Force For A Clean City"* to do something about *this health hazard.* At the time they presented a number of alternatives.

1. Leave present system as is. In that event it would be necessary to add 450 to the work force at a yearly cost of 5.5 million dollars.
2. Restructure the work schedule. Of the two plans worked out, both appeared to have unattractive consequences for the men.

Given the sensitivity of elected officials to do battle with unions in an election year, it was decided to choose the alternative of adding the additional men to the work force. We might add, lest the reader think Mayor Lindsay simply caved in, that the Uniformed Sanitationmen's Union is not just another municipal union. It is headed by John DeLury, a cagey, aggressive, articulate, media-wise adversary with a long proven record of watching out for his men. *The New York Magazine* has called him a member of the dozen or so more powerful men in New York City.

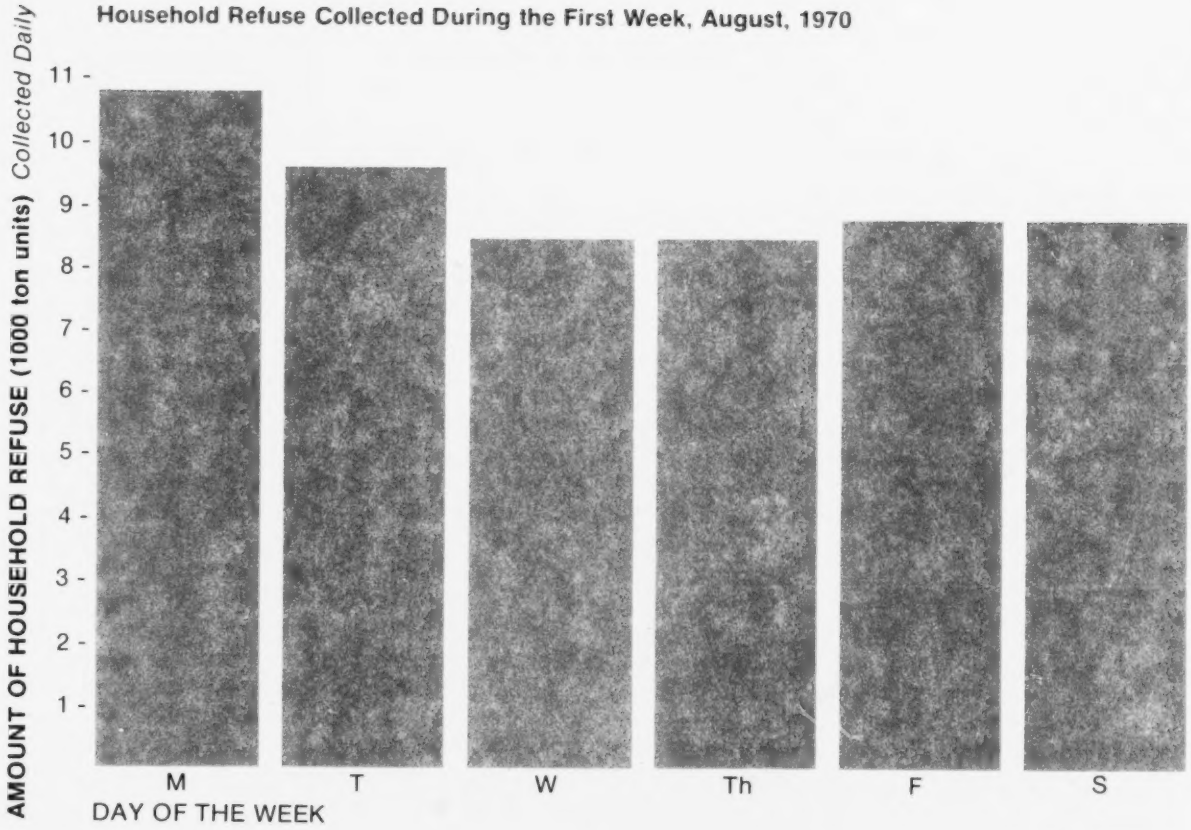
Nothing further was done on the problem until after the election (the Mayor received the endorsement of J. DeLury and his union in a tight three-way race).

ENTER THE URBAN SCIENCE AND ENGINEERING PROGRAM

Sometime after the election, Mayor Lindsay appointed a young State Assemblyman, Jerome Kretchmer, to head the Environmental Protection Administration. Kretchmer's appointment clearly represented an attempt to politicize environmental issues.

With the impending union contract negotiations coming up, the issue of restructuring

*This task force was given the mandate to ". . .reach decisions on program changes that are implementable and give visible short range results." (This emphasis on visible and short range results has been due in part to the upcoming Mayoralty election.)



work schedules was raised once again by the planning staff at EPA. It is clear, in retrospect, that the persistence of the in-house planning staff, headed by Jerry Mechling, an aggressive analyst interested in policy formulation, was necessary in keeping this issue alive. He was able to obtain Kretchmer's approval to go ahead and develop a plan of action.

It was at this point that faculty from the Urban Science and Engineering Program approached EPA. The reception was far from cordial. On our part, we were interested in initiating work on a range of problems that were of interest to our faculty. EPA, on the other hand, was skeptical about getting involved with any university group. The recent quote of Frederick O'R. Hayes, who was the Budget Director for the City of New York, is probably a good summary of EPA's feelings, "I'm negative on university consulting—the university researcher wants a publishable paper, and if this happens to be relevant to the client's problem, a special relationship is possible—they (university consultants) tend to emphasize expertise and to underplay the project manager, the fellow who organizes the effort and brings it to fruition."*

But for the fact that the planning staff was short-handed at the time, and Mechling saw an opportunity to effect a major change in work schedule, the difficulties in starting up a collaboration with EPA would have taken considerably more time and resolve. In any case, at the conclusion of our second meeting, we were asked to work on the restructuring of the work schedule together with the in-house planning staff.

Due to the pressure of the up-coming negotiations, events now moved along quite quickly.

—A staff member at EPA was assigned to prepare a detailed statement of the problem together with a summary of work done to date. She was also given the task of coordinating the EPA-Stony Brook effort. The problem statement as agreed upon is given below:

Chart Day Problem: The objective of this short-term (summer) project would be to develop manpower allocations such that missed collections would be reduced to zero. The

*From an Urban Institute Paper entitled, "Creative Budgeting In New York City."

cost of such an allocation should be minimized subject to the constraint that the solution(s) must be to the union. In fact, Stony Brook will look for solutions that may improve the chart day and vacation package for the men—when and if we learn of effective *OR techniques for generating* "solutions," we plan to approach the union to see if we can generate a solution that is particularly attractive from their point of view.

—EPA asked for a tentative solution to the problem in eight weeks.

For our part, we saw this as an opportunity for the Urban Science and Engineering Program to develop credibility with the agency. We were delighted that we were handed a high priority problem with an obvious payoff to the City.

While this was an extremely tight schedule, it was in fact, met. At each milestone, the USE faculty would deliver written material (subsequently published in three papers) in addition to making verbal presentations to the EPA planning and *line officers* in the Department of Sanitation. It is interesting to note that the level of authority of the individuals participating in the meetings moved upward with each meeting. First, only a summer intern and a systems analyst from the Department of Sanitation met with us. Then, Mechling reappeared for the first time since our initial meetings in June. By this time, we had convinced Mechling that we had indeed come up with a number of alternatives attractive to the City and the Mayor. Finally, a meeting with Kretchmer and Herb Elish, his deputy, was arranged, where the discussion centered less on the problem solutions themselves as it did on the policy formulation and implementation issues.

The role of the Urban Science and Engineering faculty now shifted. Over the next three months, bi-monthly meetings were held with Kretchmer, Elish, Mechling, and the Stony Brook faculty. The strategy for presenting the restructured work schedules was a principal subject of discussion. Looking back on these meetings we now realize that Kretchmer and Elish were also assessing us with a view toward deciding whether to include us in the union negotiations. Coincident with these meetings we met with other staff and field personnel of the Department of Sanitation to alert them to the implications of the change in proposed work schedules. They, in turn, offered a number of suggestions for making the transition from old to new.

In December, a meeting was arranged between the union, EPA, and USE faculty. It was clear from the beginning that the purpose of this meeting extended beyond a simple presentation of the proposed changes. Who were we? Were we academics or impartial university faculty with a proposal to change work schedules which was beneficial to both the union and the City? Were we, and would we continue to be, sensitive to the union-leadership's problems in selling such a change? These were some of the questions we were confronted with—some directly, some implied. For one hour, John DeLury and Jack Biget (a well-known and astute management consultant to the union) hammered away.

At the conclusion of the meeting it was agreed that we would submit a report describing in more detail than we were able to present at this meeting, the proposed change.

Although we never met with the union officials again, we prepared several reports evaluating and comparing alternative work schedule changes for them.

What is the status of the chart day problem now?

On August 4, 1971, John DeLury, head of the New York Uniformed Sanitationmen's Union publicly announced that:

"The Sanitationmen's Union agreed to go along with productivity changes requested by the City (New York City) at a contract negotiating session yesterday morning in the Union Headquarters at 25 Cliff Street. John DeLury, President of the 11,300 member Uniformed Sanitationmen's Association said, 'The Union will not stand in the way of the City's desire to increase the work force on *Mondays and Tuesdays through a rearrangement of the work schedule charts.*' "*
(italics added)

FINAL REMARKS

Lest the reader conclude that problems such as Urban Science and Engineering are beset with difficulties at every stage, it is worth noting that the rewards in terms of personal satisfaction more than make up for them. As *teachers*, we share in the

*New York *Daily News*, August 5, 1971, p. 5.

excitement and interest displayed by our students. As *researchers*, we thoroughly have been intrigued by the complexities of the particular problems on which we have worked. As *scientists*, we have been fascinated by the challenges of trying to understand and generalize from our experience in working with government. And as *individuals*, we have simply enjoyed the idea of using our talents and skills to work in areas where the needs are so demonstrably great.

SPECIFIC STRATEGIES AND MECHANISMS FOR UNIVERSITY/INDUSTRY INTERFACE

John B. Sutherland
Director
Industrial Research and Extension
University of Missouri

May 1972

Considerations in Developing Strategies and in Designing a System

We appreciate this opportunity to discuss the University of Missouri Extension Programs for Business, Industry, and Labor. Whatever degree of success we have had is not necessarily due to proliferation of bright new ideas as much as to dedication to a few principles.

Personalities have played a role also. Some years ago when I was a research director in industry, I was advised that the best way to be a successful research director was to have a president who believed in research. At the University of Missouri we have a president who not only believes in extension, but enjoys national prestige as a pioneer in modern concepts. I recommend this ingredient.

In designing and developing our extension system for Business, Industry, and Labor we used several *performance* criteria. These were:

1. Statewide delivery of professional development programs for proprietors, executives, scientists, engineers, salesmen, union leaders, and other key individuals in Missouri firms.
2. Rapid application of informational, counseling, and applied research assistance to Missouri firms in helping them solve their real problems and take advantage of new opportunities.
3. Flexible multi-disciplinary response to changing needs in the social and economic environment of the firm. (In many cases these area needs are synonymous with national goals, such as increased productivity and improved environment.)

We have used a marketing research approach to understanding our clients (or students), analyzing their needs and synthesizing educational products to meet those needs. We do not blindly accept the client's analysis of his own needs nor his suggested cure, but we do start with the needs he recognizes. This differs from the approach which starts with a piece of information and seeks an application. If differs from the practice of developing a pet short course and hoping to find twenty people who will enroll. (Industry representatives in this audience may reflect on the defunct companies who stubbornly produced what the production departmented liked to make—regardless of customer preferences or needs.)

The nature of our system places heavy reliance upon highly qualified field staff who perform much of the marketing research function and serve locally at the University-firm interface. Our field staff representatives are not projections of one or two academic disciplines nor research activities. They are oriented to the people and problems of Missouri commercial firms and represent all departments of our four campuses. The real problems of the industrialists, businessmen, and their employees almost never arrange themselves according to the discrete administrative and disciplinary units maintained in governmental and university organizations.

The Present University of Missouri Model for Business, Industry, and Labor Programs

With its integrated, unified system for *all* extension and continuing education programs, the University of Missouri presently serves five clientele groups:

1. Business, Industry, and Labor Leaders and Employees
2. Community Leaders and Government Officials
3. Food and Fiber Producers
4. Family and Youth
5. Professional (Medical, Dental, Legal, etc.)

Relatively new programs in Environmental Quality and Consumer Health round out our major program areas.

At the University-client interface all programs are coordinated by field directors whose areas correspond to regional planning commission districts.

Within this general framework, the Business, Industry, and Labor programs have as their targets the proprietors and em-

ployees of Missouri's 100,000 business and industrial firms, totaling some 1.3 million individuals. Regardless of whether the educational content concerns engineering, labor education, biology, management, psychology, chemistry, or accounting, the program area is defined by the occupational characteristics of those served.

The broad categories of activities for this program area are field, referral, library, counseling, organized educational, and applied research.

Fourteen field representatives stationed throughout the state develop rapport with business and industry leaders and effective organizations in their respective areas. Through bi-monthly meetings that rotate among our four campuses, they also become acquainted with these educational resources. Most of these representatives have masters degrees in business administration or engineering or a combination. One has a Ph.D. in chemistry and we are adding a Ph.D. in marketing. By means of intelligent liaison and careful analysis, these field representatives become the key to maintaining a dynamic University/Industry interface.

Despite efforts to maintain personal relationships between field representatives on the one hand and campus faculty on the other, heavy reliance must be placed on our *Referral System*. Field representatives may either request assistance directly from one of the campuses, or through the Referral System. Because of its excellent performance, the Referral System is used most frequently. Two full-time specialists plus a secretary operate the Technical and Industrial Referral Center. They locate the appropriate campus faculty member or center for inquiries, transmit the requests, and follow up to insure diligent response. The lending of certain reference books, federal registers, and teaching aids are handled by this Center. Each campus has a corresponding Referral Unit. Private consultants, industrial organizations, and government agencies are tapped through this system.

Many requests for assistance may be solved by specialized *library services* plus interpretation by a field representative. Our Technical Information Center is a cooperative project between the University and Linda Hall Library, a private, internationally renowned scientific and technical library. A highly experienced Ph.D. chemist, as a full-time information specialist, prepares "pertinent information packages" in response to queries. These are the products of up to eight hours free search on a given problem for a given company. Inquiries may go directly to this Center, although most are routed by field representatives through the Technical and Industrial Referral Center. In any event, a record of each inquiry is sent to the Referral Center for record keeping purposes.

Especially for assisting companies in applying new technology or management practices, in-plant *counseling* by campus experts is often necessary. Field representatives cannot have both the breadth and depth for the tremendous variety of problems and needs encountered. We believe that off-campus educational services should be at least as high quality as on-campus credit courses, and therefore strive to utilize the best faculty members from the four campuses. Some of these are on partial extension appointment. Some are paid extra compensation for counseling. Some do it because they enjoy it. Through counseling services we are able to bring experts in any field into cooperation with field representatives to discuss subjects at any level of competency.

Many changes in legislation, technology, society, economy, or international relations indicate enough common educational needs to require *organized workshops, short courses, or even credit courses* for those in Missouri firms. Individual desires for upward progress or side-wise change present similar needs. Campus faculty, field representatives, and client representatives plan these activities.

Increasingly we have need for *applied research* activities to insure and improve the quality of the assistance we deliver. Lack of sufficient effort in this direction is partially responsible for the limited national success in trying to force bits of random information into production processes and products. We are in an excellent position in Missouri with relationship to applied research on environmental problems, for example, and are moving to improve access and performance in other areas.

Regular campus students are an important source of applied research assistance to Missouri firms, and their participation is growing. As part of their credit courses they perform marketing research, design, and financial analysis for firms consider-

ing new products and new ventures. In addition, one group specifically identifies and evaluates export opportunities.

Using the Model

We work with large and small companies, new and old companies, and private individuals. Currently we are working with a small, technically-based company for whom we have provided assistance in their many organizational, technical, legal, and financial problems. Only a hint of those problems can be illustrated in the time allowed for this presentation.

The Montserrat Education and Scientific Company, Kansas City, is the outgrowth of some ideas and interests generated between a college professor and his former student. John Kuhns, the former chemistry student, had been a partner in a pet shop. With Dr. Antonio Sandoval, the chemistry professor, ideas and concepts were developed relating to many subjects but especially in the area of care of tropical fish.

In July of 1971, the Montserrat firm was incorporated with Dr. Sandoval as president and John Kuhns as executive vice president. Continued income from outside sources was needed by the principals, but at least this operational vehicle was created. In the ten months since its incorporation, Montserrat has encountered frequently occurring problems of broadly varying nature which are typical of experiences of new, small, technically-oriented companies.

Real problems seldom are discrete. Generally there are many sequential effects to actions, corrective or otherwise. For this reason, actions taken to solve a series of problems are not the sum of solutions of the problems separately defined. In the following section I shall describe a series of separately identified but inter-related problems encountered by Montserrat. Then, in a subsequent section, I shall tell of actions taken to assist the company in overcoming these problems.

1. Problems Encountered

(a) Organizational—What form of business organization should be used: Parnership or corporation? What to include in owners' agreements, by-laws, and charter?

(b) Legal—Product liability and secrecy agreements.

(c) Broad Entrepreneurial—In which of these businesses should the firm engage: Manufacturing, distribution, education, publishing, laboratory services?

(d) Marketing—What should be the product line content?

(e) Patents—How important are patents to a technically-based company and what practices should be followed?

(f) Budgeting and Accounting—How to develop and implement a good system acceptable to owners, creditors, and government agencies?

(g) New Product Development—What sequence of new product offerings would be best? Where to obtain information related to technology of processes and products?

(h) Production Planning—Should the firm spend money for special equipment for packaging, or should they contract for this service?

(i) Financing Growth—How could the company finance the rising operating costs caused by growth?

2. University of Missouri Response to the Problems

The University of Missouri Field Specialist who works with Montserrat is Dr. Dale Jackson, a chemist with much past industrial experience in new product development, plastics production, and general administration. Because of Jackson's rapport with industry of the Kansas City area, Dr. Sandoval requested his assistance.

Dr. Jackson's contributions have been so highly respected that his presence usually is requested at Montserrat's board meetings. He utilizes our previously discussed model to bring the following resources to bear on Montserrat's problems:

(a) University of Missour-Kansas City's Technical Information Center supplies technical and management reports and data.

(b) Small Business Administration is guaranteeing a loan and supplies guide for operating businesses.

(c) University of Missouri-Rolla's Engineering Management Department established and implemented a computerized Firm Analysis Program. This allows the firm to compare its performance with that of comparable firms.

(d) University of Missouri-Columbia's Law Extension Department recommended procedures and legal counsel on items relating to product registration and business licensing.

(e) A vice president of a state-wide group of banks advises on financing methods and has arranged a loan to support the growth of the company.

(f) University of Missouri-Columbia supplies literature packages and motion picture lectures for principals to study. Most are relative to management practices and principles.

(g) Jackson County Sheltered Workshop, Inc. has contracted to package certain of the products. This non-profit organization for handicapped persons does such an excellent job that the contract is highly beneficial to both groups.

(h) A local manufacturing firm supplied sample forms and suggestions for contracts and agreements.

(i) Dr. Jackson himself has worked consistently in development of patent practices, new product selection, product testing, and production processes. In each of these he leans upon his own experiences and the aid of area business firms.

Montserrat is gradually but steadily expanding its operations in both products and services. It has begun to operate profitably. It has a backlog of ideas for new products and new activities. It is establishing a performance record that will enable it to borrow money as needed to finance continued growth.

But requests for help from the University continue. Increasingly the help wanted is education for preventive and improvement purposes. The principals wish to master those areas of management and technology for which they previously had no need. Although the University plans to keep its program oriented to the problems of the firm and its people, increasing effort will be applied to anticipating and avoiding problems, or to capitalizing on the changes that create problems

INTERNAL ORGANIZATION OF THE UNIVERSITY FOR THE SOLUTION OF THE PUBLIC PROBLEMS

A. B. Biscoe, Jr.
Executive Director
Institute for Public Service
University of Tennessee Knoxville, Tennessee

May 1972

Recommendations to the Urban Affairs and Services Committee UT Board of Trustees July 27, 1971

This report contains recommendations for strengthening and enhancing the University's role in urban affairs and public service. Also included is background and planning information leading to the recommendations in the proposed overall public service strategy.

As used here, "public service" includes services to state and local governments, urban areas, government, business, and industry. Services under the Institute of Agriculture are excluded except in the proposed general statement of public service policy, which is intended to apply to the University's entire service mission.

RECOMMENDATIONS

The following is a list of recommendations proposed in the body of this report and a list of supporting administrative actions required to implement the full public service plan. The Committee is asked to consider and adopt as official University policy the statement entitled "Public Service at the University of Tennessee," included as Part A of this report. In addition, the Committee is asked to recommend for Board approval:

1. Redesignation of the position of Vice President for Institutional Research and Executive Assistant to the President as Vice President for Urban and Public Affairs and Executive Assistant to the President;
2. Creation of the Institute for Public Service, and authorization of the positions of Executive Director and Associate Director of the Institute; and
3. Authorization of administrative steps to implement the public service program, as follows:

   a. Create a Public Service Council on each campus, and a system-wide Public Service Council.

   b. Create a position on each campus to serve as a public service officer by assisting the top-level administration with public service matters and providing a coordinating point for urban services.

   c. Relocate the Municipal Technical Advisory Service from the Division of Continuing Education to the Institute for Public Service.

   d. Redesignate the Center for Training and Career Development as the Center for Government Training.

   e. Redesignate the Tennessee Industrial Research Advisory Service as the Center for Industrial Services

   f. Relocate the Civil Defense Program from the Division of Continuing Education to the Institute for Public Service.

   g. Establish system-wide coordinating mechanisms for services in the environmental and other high priority and complex areas.

BACKGROUND

In April, 1970, at a called meeting of the UT Board of Trustees, President-elect Boling announced plans to restructure UT's public service agencies to cope with growing environmental problems in the 1970s and to increase problem-solving services to both urban and rural areas. Coordination of University-wide programs in the area of urban services was assigned as a primary responsibility of the Vice President for Institutional Research.

Planning and fact-finding activities for public service have included: a system-wide inventory of programs in the urban area; a survey of public service goals and structures at 25 of the best known institutions of higher education in the country; intensive internal consideration and review of public service objectives; and planning and review of a structural framework to facilitate performance of UT's public service mission.

The urban affairs inventory and information from other universities confirm that UT and other established universities engage in urban affairs programs and public service extensively and give these activities a certain degree of prominence in public statements. UT has found itself in circumstances, however, which may be considered typical nationwide, even in other major land-grant universities: public service has tended to be peripheral opera-

tionally, administratively, and organizationally despite its publicized prominence as one of the three principal missions of many public institutions of higher education.

Consequently, the planning process which produced the above recommendations proceeded deliberately and with full cognizance of the opportunity and challenge at UT to pioneer in raising public service to an appropriate degree of partnership with instruction and research.

The body of this report presents the recommendations listed above in the context of:

A. A policy statement for public service;
B. Management requirements for implementation of the public service plan; and
C. Structural framework for implementation of the public service plan.

A. PUBLIC SERVICE AT THE UNIVERSITY OF TENNESSEE

A statement outlining the role of public service in the University follows and the Committee is asked to recommend it for Board approval as a statement of University policy:

DEFINITION

Public service at UT includes all services offered to those outside the University, including teaching in most non-degree situations as well as research which is conducted specifically at the request and for the benefit of non-University organizations in Tennessee. It is the timely and effective identification or solution of practical problems. Service activities include problem-solving efforts such as:

—technical assistance,
—applied research,
—seminars, workshops, institutes, conferences
—in-service training
—information and library materials, and
—demonstration projects

in all disciplines and inter-disciplinary areas in which the UT faculty and staff are professionally qualified to function.

PURPOSE

Excellence in teaching and in research to develop new knowledge are the primary goals of the University. As such, teaching and research determine what a university is and how it should proceed. Public service is also a primary goal and even an indispensable adjunct to teaching and research in a state-wide land grant institution provided its purposes are consistent with and contribute to fulfillment of the University's teaching and research missions. The purposes of public service at the University of Tennessee are:

1. To use the storehouse of knowledge uniquely embedded within a university to serve man and his environment by contributing to solutions of his immediate problems and by enhancing his ability to identify and realize opportunities,
2. To enhance the teaching & research missions of the University by providing convenient professional access to and from the community at large,
3. To provide professional continuity through a permanent institution as appropriately required by the ebb and flow of public activities within the community at large,
4. To help provide alternatives for public choice,
5. To open to professional faculty and staff and to students a range of opportunities to transfer their expertise to the public benefit, and
6. To interpret the University to the public through performance.

GOALS AND OBJECTIVES

The basic goal of the UT public service effort is to bring to the citizens of Tennessee—their business, their industry, and their governments—the problem-solving capacities uniquely embodied within their state-wide university system. The goal of each public service endeavor is to meet a legitimate need through the appropriate and timely application of University resources.

To achieve this basic goal several objectives must be realized.

- The public service effort of the University must be conducted within available resources in a manner which emphasizes appropriate balance among the University's teaching, research, and service mission.
- To raise public service to partnership with teaching and research requires continuing recognition and development of the University's service goal by the University's total faculty, staff, and administration.
- The University community must improve its responsiveness to legitimate public needs by offering leadership and stimula-

tion in the effective identification of public problems.

- The University's structure must encompass linkages between public needs and academic resources, a pipeline through which the public's needs become known and the creative talents of the faculty are channeled toward solutions.

B. MANAGEMENT REQUIREMENTS FOR IMPLEMENTATION OF THE PUBLIC SERVICE PLAN

The policy statement, the urban inventory, and the survey of other institutions helped in the identification of the following basic managerial considerations for translating objectives into action. The administration must provide:

1. Formal mechanisms throughout the system to stimulate communication about public service programs and to create a University climate conducive to increased effectiveness in public service;
2. Ways to encourage the University's principal resources—the faculty and student body—to engage in public service and to assure that these activities contribute to the professional development of the faculty and to the learning experiences of the students;
3. A mechanism for coordinating and developing the operations of the existing system-level public service units;
4. Administrative channels to identify priorities for public service;
5. A basis for balancing these priorities against instruction and research priorities and allocating resources accordingly;
6. A location for public service activities in the mainstream of the University's decision-making processes;
7. Means for bringing several disciplines together in concerted attacks on complex problems faced by UT's service clientele;
8. Ways to relate the University's applied (problem-solving) research capabilities to public service programs;
9. More effective communication linkages with UT's service clientele;
10. A device for system-wide coordination of public service; and
11. A focal point at the system level to make visible the University's longstanding commitment to serve its constituencies outside the classroom.

Plans for meeting these requirements are the subject of the next section.

Although a certain amount of attention must be paid to structural matters because of the breadth and complexity of the public service area, it has been recognized throughout the planning process that these modifications are worthwhile only to the extent they lead to more and better public service at UT, particularly regarding urban and environmental affairs.

C. STRUCTURAL FRAMEWORK FOR IMPLEMENTATION OF THE PUBLIC SERVICE PLAN

(See organization chart)

1. *Create the position of Vice President for Urban and Public Affairs.*

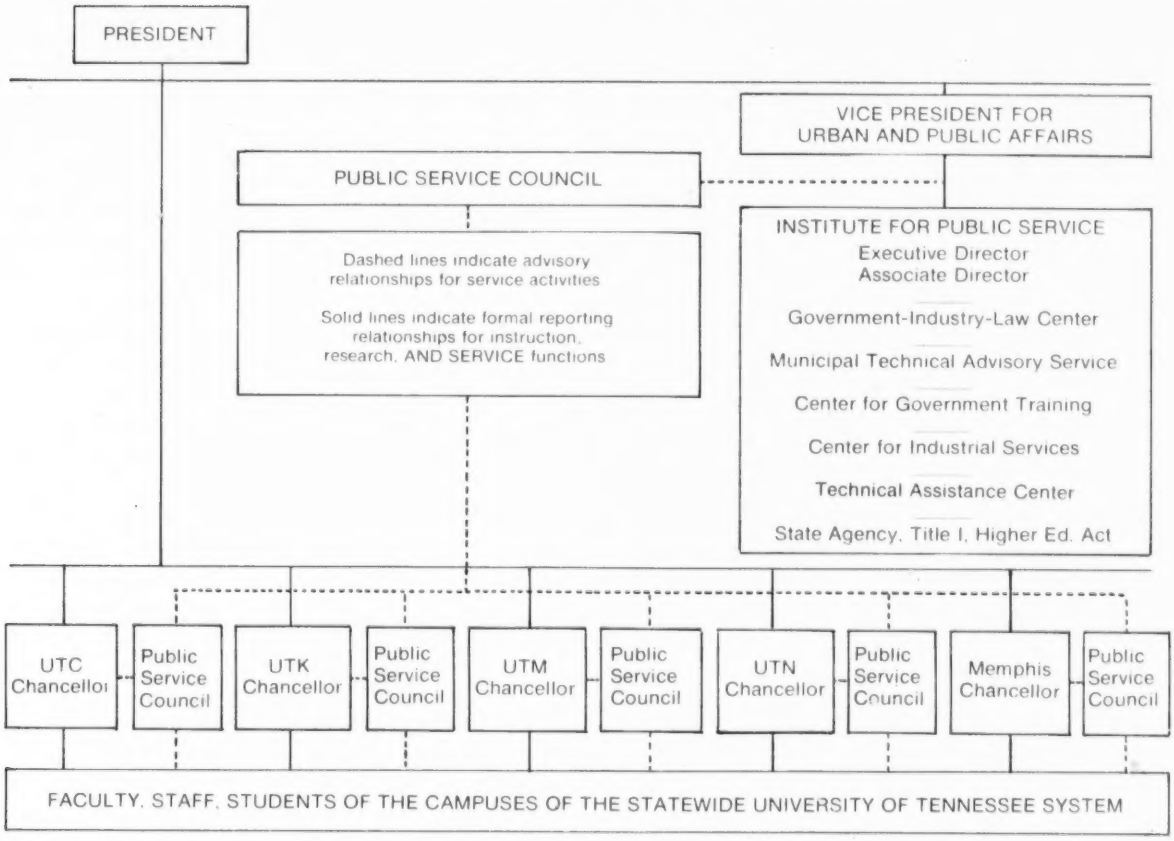
   This position would be created by redesignating the Vice President for Institutional Research and Executive Assistant to the President as the Vice President for Urban and Public Affairs and Executive Assistant to the President.

   Responsibility for the Office of Institutional Research would be reassigned to the Executive Assistant and, consequently, the Vice President's responsibility for institutional research would remain unchanged. Responsibilities in the urban and public affairs areas would include developing and coordinating (a) the urban affairs and public service mission of the University and (b) University relations with all levels of government.

   A suggested statement of duties in a form suitable for inclusion in the Board of Trustees' Charter and By-Laws [Article IV, Section 3. (e)] is as follows:

   > (e) The Vice President for Urban and Public Affairs and Executive Assistant to the President shall be responsible for the development and coordination of University-wide policies and operations concerning public services offered to urban areas, to all levels of government, and to business and industry. He shall be responsible for the operation of all system-level public service organizations in the Institute for Public Service and he shall work with the Chancellors on public service programs with University-wide implications. In addition to representing the University's position as it relates to the deliberations of the State Legislature,

ORGANIZATION FOR PUBLIC SERVICE—U.T. SYSTEM*


PRESIDENT
VICE PRESIDENT FOR URBAN AND PUBLIC AFFAIRS
PUBLIC SERVICE COUNCIL
Dashed lines indicate advisory relationships for service activities
Solid lines indicate formal reporting relationships for instruction, research, AND SERVICE functions
INSTITUTE FOR PUBLIC SERVICE
Executive Director
Associate Director
Government-Industry-Law Center
Municipal Technical Advisory Service
Center for Government Training
Center for Industrial Services
Technical Assistance Center
State Agency, Title I, Higher Ed. Act
UTC Chancellor
Public Service Council
UTK Chancellor
Public Service Council
UTM Chancellor
Public Service Council
UTN Chancellor
Public Service Council
Memphis Chancellor
Public Service Council
FACULTY, STAFF, STUDENTS OF THE CAMPUSES OF THE STATEWIDE UNIVERSITY OF TENNESSEE SYSTEM

JULY 1, 1971 *Organization for Agricultural Services Omitted

the Executive Agencies, and the various local governments, he shall act as University liaison with the federal government in matters bearing on both University programs and resources. The Executive Assistant shall perform duties assigned by the President. He shall be responsible for conducting institutional studies on managerial, operational, and academic subjects as initiated by his staff or requested by University or campus personnel. The Executive Assistant shall schedule staff and other meetings, handle correspondence on behalf of the President, implement decisions made by the President and his staff, and represent the President in appropriate conferences and meetings.

2. *Establish the Institute for Public Service.*

The Institute would encompass the functions of and house as distinguishable units those organizations now at the system level with full-time public service missions, including: the Government, Industry, Law Centers; the Municipal Technical Advisory Service; the Technical Assistance Center; the Center for Government Training (presently named the Center for Training and Career Development); the Center for Industrial Services (presently named the Tennessee Industrial Research Advisory Service); and the State Agency for Title I of the Higher Education Act of 1965.

The Municipal Technical Advisory Service would be relocated from the system-level Division of Continuing Education to the Institute. In addition, the Civil Defense Program, which is also a part of the Division, would become an assigned responsibility of the Center for Government Training.

The Institute would provide a means to coordinate the public service aspects of UT's involvement in urban affairs, provide operating assistance to the Vice President for Urban and Public Affairs in developing and coordinating all public service activities, and serve as a visible focal and communication point for the University's public service commitment.

The Institute would be administered by an Executive Director and an Associate Director. The Executive Director would report to the Vice President for Urban and Public Affairs. The role of the Institute is discussed more fully in Appendix B as it is reflected in the principal responsibilities of the Executive Director.

The Associate Director would provide leadership, along with the Director, in all areas of Institute operations. He would concentrate in particular on the University's public service role as it relates to state government. His position would carry the title Associate Director of the Institute for Public Service and Executive Director of the Government, Industry, Law Center. This Center was established for the express purpose of providing a means for liaison between University programs and capabilities and state needs. The Associate Director of the Institute will continue to develop and implement the role of the Center, as it is embodied in the Institute, in furtherance of relations between state and University.

3. *Establish a Public Service Council on Each Primary Campus and a System-Wide Public Service Council.*

The campus Public Service Councils would be composed of public service-oriented faculty and students and would be chaired by the Chancellor or Academic Vice Chancellor. The Council would (a) provide a general climate for and commitment to public service, (b) advise the Chancellors and Academic Vice Chancellors on needs and priorities, (c) encourage creative approaches to public service problems and opportunities, and (d) provide an interdisciplinary forum to encourage and advise more comprehensive attacks on the complex problems facing the University's outside constituencies.

Each campus Council would designate a number of delegates to the system-wide Public Service Council, which would provide advice and counsel regarding system-level functions and operations in public service. The campus and system-wide Councils may involve non-UT personnel, in appropriate ways, to improve communications with the University's service clientele.

4. *Designation by the Chancellor of the Chief Public Service Officer on Each Campus.*

The University's ability to offer increased levels of public service with greater perception and significance depends on widespread participation of faculty. Consequently, a direct line of responsibility in the main administrative channel of each campus is necessary.

The offices of the Chancellor and the Academic Vice Chancellor are the campus locations where programs are coordinated, resources are allocated, and faculty performance incentives such as salary, rank, and tenure are considered. Effective implementation of the University's newly refocused and expanded public service role requires these direct connections with the principal decision-making and program-implementation channels of the University as a whole. Each Chancellor will be asked to designate himself or his academic Vice Chancellor as the chief public service officer on his campus.

Additional requirements for implementing public service activities are related to large program areas at the campus level. For example, environmental matters, urban affairs, and transportation are such broad and complex areas that the public service structure must provide appropriate means to organize faculty and other campus resources on each campus and among campuses.

Urban affairs, in particular, relates to all levels of University operations. Although system-wide coordination of the public service aspects of urban affairs will be effected through the Institute for Public Service, additional points for coordination will be established, including one on each campus. A public service officer will be appointed to assist each Chancellor or Academic Vice Chancellor in his new public service role. The public service officer also will be designated as a primary point of contact for urban services on each campus. In this way coordination of urban services can be provided among and within campuses, through the Institute and the Chancellors.

PRINCIPAL RESPONSIBILITIES OF THE EXECUTIVE DIRECTOR, INSTITUTE FOR PUBLIC CHANGE

Working in close conjunction with the Vice President in charge of public service and appropriate campus officials, the Executive Director of the Institute should perform or participate centrally in the performance of the following responsibilities:

1. Implement the University's public service policy, as published.
2. Identify opportunities and needs for public service, with appropriate emphasis on urban and environmental affairs, and arrange to have the opportunities and needs met in satisfactory ways.
3. Stimulate faculty and student participation in public service efforts by creating a climate conducive to effective communication and definition of public service needs.
4. Maximize the levels of public service rendered by the University to a degree consistent with and contributing to the University's instruction and research objectives and within resource limitations.
5. Coordinate the activities of system-level public service units and provide assistance in coordinating public service among the campuses.
6. Provide advice and staff assistance with regard to the operation and continuing development of the University's public service structure.
7. Provide a visible focal point for information flow into and out of the University concerning public service requests, needs, and opportunities.
8. Provide staff assistance in the operations of the system-level Public Service Council.
9. Develop and maintain continuing relationships with public service clientele through personal contact, correspondence, and appropriate printed material.
10. Develop sources of non-UT funding for public service activities.
11. Design and implement public service projects.
12. Stimulate interdisciplinary activities in public service and related applied (problem-solving) research areas.
13. Develop and maintain suitable (managerial) fiscal data on public service resource needs and expenditures.
14. Develop and maintain an internal management system for the Institute itself, including budget, personnel, and so forth.

USER AGENCY POLICIES AND MECHANISMS FOR UTILIZING THE RESOURCES OF INSTITUTIONS OF HIGHER EDUCATION

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May 1972

User agencies and institutions of higher education have traditionally experienced difficulty in working together. Essentially, the difficulty arises because of the unnatural basis of their alliance. For the most part, user agencies are more organized, emphasize a somewhat rigid hierarchy of personnel, and are preoccupied with the applicability of immediate solutions to agency problem areas. On the other hand, universities are typically rather disorganized, have a history of institutional isolation from the problems of society, require a relatively long period of lead-time in taking action, and focus primarily upon the development rather than the application of knowledge. In addition, the tendency to filter their perceptions through traditional university disciplines has on occasion severely compromised the effectiveness of university personnel in examining user agency problems which have a multi-disciplinary basis.

As a result of these differing orientations and operational styles, the task of building bridges between user agencies and universities is always likely to be difficult. But the potential rewards from such user agency-university affiliations are significant enough for us to work hard at establishing and maintaining these alliances. For in the transfer from discovery of knowledge to the application of that knowledge to the problems of our society, such an alliance between user agencies and universities has a potential for impact that would be impossible to achieve in those situations where the marketplace is the principal transmitter of innovation to application.

Given the potential benefits of, and the difficulty in, establishing close working relationships between user agencies and institutions of higher education, the first function of this essay will be to describe several of the forces that are compelling universities into greater involvement with user agencies. The focus then turns to a suggested division of labor whereby various institutions of higher education might examine their unique roles. Finally, the paper will discuss what universities should and should not do as they begin to develop affiliations with various user agencies.

Factors Influencing University Involvement

Assuming that universities have some basis for collaboration with user agencies, complex and uncertain as they may be, in what directions do they lie? The obvious attraction for university personnel today is the production of knowledge and research in domestic affairs, urban and environmental problems, issues of population growth and migration, poverty and racism.

The scene I know best is the urban one. Let me use it as an example in treating the agency-university interface. There exists a distinguished tradition in the study of the history of cities, and there is farily substantial literature on the governance of cities, their ecology and their characteristic social organization. But, the total base is small. None of these academic specializations now provide a basis for dealing with practical urban questions, and we cannot expect anything like the success scientists have had in marshaling knowledge for the solution of security of space problems.

Nevertheless, there is some grounds for optimism. Social science continues to be more empirical and more policy oriented. The purist view of legitimate scholarly work so eloquently defined by Jacques Barzun (1968) has been replaced by the new academic ethos. And collaborative work increases—it is quite common now for distinguished scientists to have common work projects without losing the respect of their colleagues in their own disciplines in the process. Consultantships to certain governments, businesses, and labor add to the sense of relevance.

Just as the activities of professors have become more heterogeneous so have the functions of the university. Often without serious consideration, universities have accepted a variety of missions they have not sought out, but which have been thrust upon them.[1]

In part, the success of academics in wartime activities—in O.S.S., the Manhattan Project and in the development of radar—had led to their being asked to take on new tasks, but success is not the entire answer. Other social institutions have simply not been available for these jobs or have defaulted on them already. In any case, these changes in the role of universities and university men since the war alter the prospects for new university knowledge in helping solve the problems faced by user agencies.

There are other compulsions besides the thirst of understanding that now direct universities toward increased involvement with user agencies. Like any organization, a university has a basic interest in its environment—the space in which their members live and work. Lately, for more and more universities, that environment has become threatened by decay and change in land use and function.

Universities located in rural areas, as many land grant colleges were, and the many which were originally established in pleasant middle class sections of town simply did not face these problems until the 1960s—and some limited numbers do not face it now. But most of the urban universities find they must take an interest in their local environments not just out of compassion or conscience but out of self-interest. Urban universities located in slums or near them find it difficult to attract able faculty and students.[2] Moreover, some observers of the university scene attribute part of student unrest to their dissatisfaction with their experience with urban life. Increasingly, the universities have come to have a stake in improving their local environments, a fact possibly first appreciated by the University of Chicago in its leadership in reconstructing the Hyde Park-Kenwood area. The same sorts of motivations have guided the University of Pennsylvania's reclamation of its decaying neighborhood and the ambitious housing programs of M.I.T. and Harvard. As a consequence, the inevitable strains between universities and communities have diminished. The lessening of old strains, the continuing role of curiosity sensitized by considerations of domestic priorities, and the practical compulsion of organizational maintenance suggest that universities are more prepared than ever to enter into mutually beneficial alliances with a wide range of user agencies. The real question remains: *How*— through what ways and means that are effective, important and not destructive of other higher educational responsibilities?

A Division of Labor Among Institutions of Higher Learning

If user agencies and universities are no longer destined to a relationship consisting of alternating periods of isolation and confrontation, neither are they equipped to be in continuous collaboration. The beginning of wisdom about the academic role in relation to user agencies is that the university in general cannot respond to all social ills and the university in particular varies widely in the assignments it might undertake. Some can do much; many can do something; and some can do only little.

The first step toward understanding how universities can help solve user agency problems is to match types of universities with types of tasks. Too often stressing their deep dissatisfaction with the quality of urban life, commentators have cast all universities into the same mold by calling on them, as a group, to redirect their efforts toward social action: toward altering housing policy, toward the solution of racial inequities and not least important toward solving the problem of the cities. This sense of urgency ought not to be lost, but it should be accompanied by an effort to think specifically about the unique abilities of different kinds of universities for dealing with the problem at hand. Granting that distinctions have been blurred in recent years, the classical categories of public, private, and denominational support still give clues as to appropriate assignments.

Publicly sponsored institutions have, in our judgment, the greater share of urban scholarship and urban research, in part because their

[1] This is to be contrasted with one view that denies university involvements with the government and the military but happily accepts university engagement in social action ranging from providing remedial nursery schools for neighborhood children to expressing political opinion on such matters as the Vietnamese War. Another view supports academic involvement in selected situations which enhance the abilities of universities to achieve their goals.

[2] Medieval Oxford did not escape the unpleasantness of an urban location either. Things became so bad in the fourteenth century that a Royal letter, written probably on University instigation, was sent to the Sheriff complaining, " 'the air is so corrupted and infected' by the filth in the streets 'that an abominable loathing' (or perhaps 'ague') is 'diffused among the aforesaid masters and scholars, 'a state of things aggravated by the practice of burning fat. . .before their houses.' " *(Rashdall, 1895, II, 389.)*

resources are greater and their financing more secure these days than all but a handful of private universities. A more compelling reason is their capacity to identify with state and local governments on the firing line. Nevertheless, private universities have their own contributions to make. Typically, they have a greater measure of flexibility and freedom and in certain circumstances find it easier to take on controversial and risky programs that involve direct observation and evaluation of experimental public programs. The M.I.T.-Harvard Joint Center for Urban Studies, for example, has frequently undertaken commentary that, however correct, was controversial and required consideration and response on the part of policy-makers. More important, private universities may undertake long lead time research with a less immediate sense of obligation to report their utility. The important point to make is that the diversity of educational institutions by kind and place in the United States is an advantage in developing relationships with user agencies—and suggests a division of labor to be exploited.

Universities are also differentiated according to size and according to the quality of their faculties, students and administrators. Small institutions obviously cannot take on the kind of big-scale operations that their larger colleagues can—because their resources are limited and because the balance of activities in small universities can more easily be thrown askew by the introduction of a single large scale program. A candid admission of quality, that universities realize but seldom acknowledge, is in order—the variation in the quality of intellectual resources different institutions mobilize. A community college can carry out tasks a prestigious national university cannot—and vice-versa. Remedial education for disadvantaged students should not, for example, be assigned to professional members of the American Philosophical Society or the National Academy of Sciences.[3] Theoretical computer modeling of urban growth is not the forte of a humanities department within a liberal arts college. These variations in academic capacity need to be systematically discussed and acknowledged as part of the process of timely academic aid.

The implications of this distinction between national and local university participation with user agencies are fairly clear—at least in a general way. National universities should, to the extent that they become involved at all, direct their efforts to larger scale programs, those requiring multiple and higher skilled competencies, and those involving problems of coordination among disciplines and professional schools. They probably should not attend to problems which are more or less idiosyncratic to particular regions or locations. This means that localities should not be asked to finance the development of major programs. These require more and different support from business corporations, foundations and the federal government. This is the first principle for understanding how the Academy comes to work with the city.

What Universities Should and Should Not Do

A special principle is, granted differentiation by type, limitation by general institutional competence. Although we are apt to think that there is no societal problems for which some expertise is irrelevant, the fact is that universities do some things well and other things less so. Their members are not equally competent to deal with every social problem nor have they resources to deal with them all. Keeping in mind a general sense of what universities do well and what they ought to strive to do well, we can begin to indicate the sorts of activities that are inappropriate and appropriate for them to undertake.

1. *Universities should be loathe to compensate for inadequate public services even though the case can occasionally be made on educational grounds for doing so.* Universities should not be in the business of relieving economic distress in their communities. They should not attempt to provide for more equitable administration of justice. And they should not fill in for inadequate systems of primary and secondary education. It is not that these activities are unworthy but rather that the chances for improving public services decrease if these services are provided by universities. As we shall see, there are special circumstances under which everyone of these problems might be appropriate for university involvement but not as supplements to public service.

This matter calls to mind the remark made by a very able college freshman who happened to be taking elementary physics with a Nobel laureate. When asked how the course was going, he answered somewhat ruefully, "It's like using a very big steam shovel to dig a very little hole."

2. *Universities should not enter into local political activities in such a way as to upset local power constellations.* To do so would be frivolous since universities cannot adequately or legitimately assume responsibility for political acts. If they corporately engage in local politics, they run the risk of paying a very high price indeed for doing so. Since the only redress politicians have against universities involves limitations of autonomy and support, it is in these two areas that universities will suffer most. Universities cannot insist on continued financing if they engage in policies contrary to those who vote support to them.

3. *User agencies and universities hold each other accountable for the maintenance of high standards of performance.* User agencies must begin to utilize greater precision in specifying their problems and the results they anticipate from entering into relationships with universities, and, in many instances, university personnel can assist in the skill development that is a necessary prerequisite to this task. In addition, since there has been a tendency for some user agency personnel to treat professors as sacrosanct, it is the responsibility of both user agencies and universities to destroy the myth that professors will be able to complete user agency tasks effectively just because they happen to be professors.

4. *Universities should develop more imaginative approaches to the utilization of personnel.* The prevailing system of incentives and rewards within universities does not adequately support faculty involvement in service oriented activities. As a result, significant adjustments will be required in career motivation for professors if they are to take seriously the university's commitment to user agency involvement. In addition to encouraging faculty member involvement within user agencies, universities should seek out and establish reciprocal relationships where persons with diverse experiences in a variety of different user agencies become an integral part of the university system. To the extent that these individuals have functioned effectively, and thoroughly understand the operation of user agencies, they can contribute significantly to the establishment of an effective alliance.

Another significant personnel resource within the university setting that we have just begun to tap is the students. Both university faculty members and user agency personnel for the most part have disregarded the talent, capabilities and usefulness of both undergraduate and graduate students in sharing a significant portion of the task involved in the conduct of research or training efforts for user agencies. By thoroughly integrating service components within graduate and undergraduate programs, a wide range of more effective utilization of student talent can be realized.

5. *Universities should emphasize interdisciplinary research and inter-institutional collaboration.* Universities must begin to develop ways of combining the traditional academic discipliines into effectively functioning multi-disciplinary research teams that are designed to focus specifically on particular user agency problems under consideration. In addition to interdisciplinary collaboration within an individual university, institutions of higher learning must begin to develop inter-institutional collaborative mechanisms whereby complementary talents from several universities can be brought to bear on specific user agency problems.

6. *Universities should utilize discretion in the selection of affiliating user agencies.* Universities still have some credibility left, credibility that, for the most part, has already been used up by commercial consulting firms, and others who would seek to influence user agency policies and activities. Since this university credibility is a very special commodity that is based to a certain degree on the university's tradition as a center of knowledge and learning, it should not be squandered frivolously upon irrelevant topics or in inappropriate ways. For example, there is the danger of user agencies trying to use academic personnel as a scapegoat for difficult user agency situations. This willingness to shift responsibility for informing the public about certain negative aspects of user agency policy has been far too prevalent in the past and may be even less useful as an approach during the period when universities and user agencies begin to collaborate more closely.

7. *Universities should resist involvement in activities for which they have no expertise.* They should not, for example, have raised the hopes of those participating in the ghetto entrepreneurship program when faculties of business schools know altogether too little to have promised success. They should, quite clearly, begin studies to increase knowledge on these matters. Similarly, lending university prestige to haphazard and "instant" evaluation of urban programs jeopardizes the universities and does not produce effective and useful assessments.

These caveats are merely that. They are not intended to say that the university should retreat from involvement in general and in particular with user agencies. Instead, we recognize the unmistakable trend toward increasing university engagement in societal matters of all sorts. This trend toward greater involvement cannot be attributed only to the thrusting of new responsibilities onto universities. Carl Kaysen is quite right in observing that universities have, since the forties, reached out for new activities not because they are newly conscience stricken but because these new activities have an intellectual justification and are of interest to university faculties. Kaysen's remarks alert us to the principle on which such involvements should be assessed. Universities are organized primarily for the production and transmission of knowledge and while this sounds excessively abstract and high-minded, it does provide a rough criterion for judging which kinds of involvements make the most sense. *In general, universities should readily accept those tasks which relate them symbiotically to their communities—local and national.*

University health services provide a model for symbiotic relations between university and community. Medical schools depend for quality on the wide variety of patients supplied best by large city populations. University hospitals need large numbers of local residents to support the various services they offer and they depend for clinical services on a large base of practicing physicians located nearby. In turn, residents receive better medical attention than they would get at local hospitals and health stations. The quality of university hospitals is generally conceded to rest on the mutual support of medical training, clinical service and health research. The mutual benefits derived by universities and communities from medical education and services are not vitiated by the many and justified complaints about the way the system actually works. We are fully aware of patients' criticisms about being "used" by university physicians, who themselves are unhappy about the quality of services they can provide. But problems that conceivably can be solved by more effective management do not falsify the main point. There is a variety of community-related activities which benefit both universities and communities and make their relations symbiotic. And it is these which should be sought out by universities. Some activities which use the distinctive capacities of universities and which benefit communities include:

(a) *The provision of manpower adequately trained to meet national and local community needs for professional services and more effectively trained to deal with distinctly urban problems.* This does not mean that there should be at every university a department of urban studies or a center for urban affairs. There is a discipline which falls into that rubric which has academic legitimacy. As a consequence, urban departments in universities are apt to be an assortment of scholars—economists, sociologists, engineers, anthropologists and historians—who collectively look like the real thing but fail to provide an integrated approach to urban studies. Instead, there probably should be something like urban weighing of curricula. This would involve the representation of urban interests in most departments and professional schools which would provide for intensive training in urban studies but would leave the autonomy of these groups undamaged. Urban institutions should have a greater urban weighing of curricula than the traditional land-grant institutions which have their own emphasis on agricultural research and service. This is a start at least in producing students sensitized to urban problems and educated to some degree to see them in perspective. It is by no means the whole answer.

(b) *The development of prototype housing, schools, hospitals, or systems of transportation.* Professional schools should find it both challenging and well within the ac-

tivities they consider appropriate to design and bring tc fruition models of the very best solutions to public problems. Many universities have operated primary and secondary schools designed as laboratories for educational research and educational training. The "Lab School" at Chicago and Hunter College's "Elementary School" have served these purposes and achieved some fame in the process. The building of prototype housing is less common but equally desirable both for the training of university architects and the development of better and less costly dwellings. We need not sketch out the idea of prototypes any further except to underline the necessity for experimenting with what the most competent academic judgment considers excellent.

(c) *The provision of professional and technical assistance to groups—officially constituted and otherwise—undertaking the solution of specific problems.* This will help to bridge the gap between academic knowledge and the practical realities and, hopefully, enhance the former by dealing with the latter. In due course, universities' capacities to produce trained manpower should also improve.

(d) *The conduct of basic research of several kinds—traditionally sanctioned fundamental research on urban problems, the serious evaluation of the success of urban programs*[4] *and applied research designed to answer questions of special concern to local and federal authorities.* The first two types of investigation are reasonably familiar and need no further comment. The last, however, provides interesting opportunities for concrete improvements in the urban condition. One form this research has already taken is the establishment of "Urban Observatories" which are designed to investigate problems selected jointly by responsible city officials and urban researchers and to provide for linkages between universities and city governments. Urban observatories seem to work best in places where the university is locally oriented and officialdom receptive to new ideas. They have the greater potential of comparative work—simultaneous investigation and report on the same urban problem and program as it affects different communities. This is the symbiotic town and gown relations in multiples.

Another example is the Institute for Governmental Services which operates within the University of Massachusetts as a linking mechanism between the University and various local and state governmental agencies throughout the Commonwealth. The primary task of the Institute is to facilitate the flow of resources from all three campuses of the University of Massachusetts to the citizens of the Commonwealth and, in addition, to develop collaborative service-oriented programs among the various schools, departments, colleges and campuses within the University of Massachusetts. The Institute is involved primarily with local governments in such problem areas as planning and zoning, budgeting, property tax assessment, administration, transportation, organization design, personnel study, inventory of community resources, both physical and social, water and air pollution, taxation, urban renewal, the exploration of federal and state grants as they affect local government, the codification of statutes, sewerage and drainage problems and the social problems of local communities.

These simple proposals and the view of American universities' varying capacities which underline them are not intended to satisfy any one of the main schools of thought on the role of universities in solving social problems. Those holding a conservative position on university functions will, no doubt, think these proposals represent one more instance of the subversion of the Academy. Others who see the university as an instrument for the achievement of radical social change will find them eclectic, inadequate and overly concerned with the survival of the university in its present form. The principle at least ought by now be clear; institutions help society by redirecting their own energies and programs and not by undertaking to substitute one institution for another. One can and should invoke the civilizing values of the university in supporting its causes, but these are not its only justification. If we are to make any headway in dealing with the complicated problems that our society faces, universities should not be deflected from their traditional goals. It is temptation to commit all universities to the task of trying to make life more bearable,

[4] A sophisticated and useable research methodology for the assessment of programs' success exists in sociology and in economics. (See Human, *et al.* 1962.)

but that temptation must be resisted. And by resisting the temptation to undertake everything, we may be freed to do something. Helping user agencies in ways universities have functioned well before, will not immediately produce the cities we so urgently require. However, it may produce the institutions, both public and private, and the people to man them that, in turn, will build communities of quality, and beauty and perhaps of peace.

APPENDIX

Conference Participants

CONFERENCE ON INSTITUTIONS OF HIGHER EDUCATION
AS A RESOURCE IN THE SOLUTION OF NATIONAL PROBLEMS

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